Paper

Nov. 2, 1951

PRACTICAL OPERATION OF A KRAFT BLEACHING SYSTEM . . . Page 21

KRAFT-GROUNDWOOD MIXTURES FOR CYLINDER BOARD . . . Page 24

ARE YOU GETTING THE MOST FROM YOUR POWER TRUCKS? . . . Page 28

WOOD PULP

G

Established 1886

"Difficulties are things that show what men are."

EPICTETUS

Pulp and Paper today is a world force. Without it, all industry and life—as we have come to know them—would undergo almost inconceivable changes.

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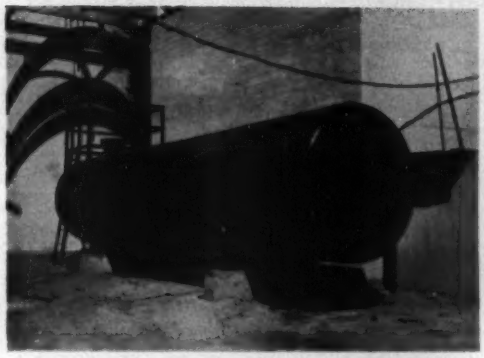
Is Your Equipment Keeping Pace with New Demands?



Above: This 7,500-gal. SO_2 tank at the St. Regis Paper Company pulp mill at Cantonment, Fla., was built at our Birmingham plant in accordance with the A.S.M.E. Code for Unfired Pressure Vessels.

Above: (from L. to R.) 22-ft. diam. by 25-ft. blow tank and 15-ft. diam. by 40-ft. foam tank fabricated at our Birmingham plant and erected at Cantonment by one of our experienced field crews.

THE pulp and paper industry uses processing tanks at almost every step of its operation. To produce high quality pulp *economically*, you should have reliable, top performing equipment. Chicago Bridge steel plate structures are designed to handle both simple and specialized pulp producing and storage jobs.

It is the wise pulp and paper plant operator who constantly keeps his eye to the future by laying careful plans to meet the coming challenges of increased competition. One of the chief ways to get more efficient plant operation is to take stock of your present equipment and make the necessary improvements. In the long run, "just getting by" with what you have is not the safest standard. The installation of new, up-to-date equipment will improve your competitive position by lowering your production costs and can mean the difference between profit and loss.

We build sulphate and sulphite digesters, diffusers, spherical acid accumulators, foam tanks, blow tanks, salt cake tanks, lime storage tanks, flat bottom storage tanks and elevated water tanks for the pulp and paper industry. They are made of carbon steel, stainless steel or lined, as specified.

Look to Chicago Bridge and Iron for dependable service for your next steel plate structure needs. Write our nearest office for more information and quotations. There is no obligation on your part.

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In Canada: HORTON STEEL WORKS, Limited, FORT ERIE, ONT.

Only with B. F. Goodrich grommet belts can you make these savings!

Save 3 ways! Investigate today! Write or mail coupon

You save belt costs because belts last longer, save production costs because machines keep running with fewer interruptions, save maintenance costs because they need less attention.

Patented grommet belts by B. F. Goodrich represent the only basic change since invention of the V belt. Belts last 20 to 50 per cent longer, depending on service. (The more severe the service, the greater the increase over ordinary belts.) Grommet belts have more rubber; they're more flexible, give better grip, less slip.

What is a grommet?

A grommet is like a giant cable except that it's *endless*—a cord loop built up by winding heavy cord on itself. There is no overlapping cord *section* as in all ordinary belts. Most belt failures occur in these sections where cords overlap!

All cords put to work

Each of the two grommets and every part of a grommet carry their share of the load. In ordinary belts under high tension the center cords "dish" because tension is greater near the driving faces. Dished cords are doing less work, not pulling their share. Grommet belts have no center cords, there is no dishing—therefore much more strength in proportion to cord volume—and less stretch. Grommet belts stretch, on an average, only about one-third as much as ordinary belts.

Better grip, less slip

Grommet belts have more rubber in relation to belt size. Without any stiff overlap, they're more flexible, grip pulleys better. Size for size, grommet belts give ⅓ more gripping power, pull heavier loads with a higher safety factor. Because there is less slip, there is also less surface wear.

Send for proof

Send the coupon for a set of reports telling users' experiences and showing actual installations where grommet belts outlasted all others. Some typical cases:

"... within a few days ordinary belts had stretched ... After six months of 24-hour-a-day service BFG grommet belts haven't stretched at all ..."

"Ordinary belts lasted only 5 or 6 weeks ... B. F. Goodrich grommet belts are in their sixth month of service ..."

"Previous belts suffered from shock loads, wore out fast ... BFG grommet belts have been in service 2 years with no shut-downs..."

There are hundreds of cases like these.

They cost no more

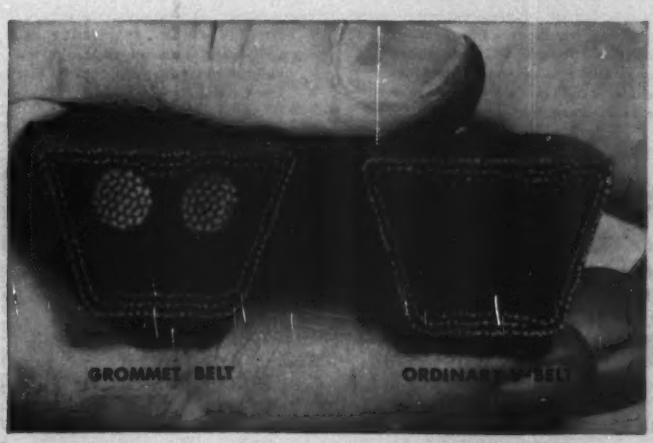
BFG grommet belts cost not one cent more than others. The savings they make for you are clear profit. They are made in C, D and E sections. They are patented by B. F. Goodrich. No other V belt is a grommet belt (U. S. Patent No. 2,233,294).

Write, send the coupon or see your B. F. Goodrich distributor. (He will show you his "X-ray" belt that shows the grommet construction clearly.)

Grommet Belts BY

B.F.Goodrich

FIRST IN RUBBER



The B. F. Goodrich Company
Dept. PT-11
Akron, Ohio

☐ Send set of reports telling users' experiences and showing actual installations proving that B. F. Goodrich grommet belts outlast all others.

☐ Have distributor show me the "X-ray" belt that shows how B. F. Goodrich grommet belts are made.

Name_____

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Jordan-Type FAST'S COUPLINGS

last longer and cost you less

Here's why: Fast's Couplings normally outlast the equipment they connect. For example, take the first Fast's Jordan-Type Coupling, which was installed in 1922. The original Jordan machine was scrapped long ago. But the Fast's Coupling was saved and today that original coupling is still in use on another machine!

Fast's are the best insurance you can buy against needless and costly coupling failures. Because of their rugged construction and foolproof design... their reasonable cost can be spread out over 20 years or more to give you *lowest coupling cost per year.* And with Fast's Couplings, Koppers gives you engineering service unequalled in the industry. Find out about Fast's today!

Fast's Couplings assure long, trouble-free life. Records prove that Fast's installed in 1920 and 1922 are *still in use*... on sectional paper mill drives, on Jordan machines and on auxiliary machinery. And that's a record never equalled by any other flexible coupling!

For full details, engineering data, specifications and photographs, mail coupon today for your copy of Fast's *free* Catalog.

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FAST'S
THE ORIGINAL
GEAR-TYPE
Couplings

INDUSTRY'S STANDARD FOR 31 YEARS

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Gentlemen: Send me Fast's Catalog which gives detailed descriptions, engineering drawings, capacity tables and photographs.

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Paper TRADE JOURNAL

VOL. 133 NOVEMBER 2, 1951 No. 18

FEATURES

Government Gospel 14

Kraft Pulp Bleaching in Four Stages 21

Characteristics of Sheets Made from Pine Groundwood-Pine Kraft Combinations 24

More Service From Power Trucks 28

TAPPI Engineers Meet 34

DEPARTMENTS

Trends 7
Our Business 9
News of the Week 11
New Paper Uses 12
People 18
Industrial Section 21
New Equipment 32
CLASSIFIED ADVERTISING 44
New Materials 35
New Literature 36
Financial 37
Suppliers 38
Materials 42
Prices 43
ADVERTISERS INDEX 56

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NEXT WEEK

"Slitting and Roll Winding Fundamentals" by Eugene J. Ward, Cameron Machine Co., is a complete and informative story of the evolution of the present modern slitter-winders, through various stages from a somewhat crude beginning.

An interesting description of some of the problems as well as the many advantages of hot stock refining will be found in "Some Aspects of Cooking Pulp for Hot Stock Refining" by Franklin L. Jones, St. Joe Paper Co.

REMEMBER THESE DATES

NOV. 26 to DEC. 1: 23rd Exposition of Chemical Industries, Grand Central Palace, New York, N. Y.

DEC. 2-5: American Institute of Chemical Engineers, Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.

FEB. 17-21: American Pulp & Paper Assn., Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y.

FEB. 18-19: Salesmen's Assn. of the Paper Industry, Annual Meeting and Luncheon, Waldorf-Astoria, New York, N. Y.

FEB. 18-21: Technical Assn. of Pulp and Paper Industry, Annual Meeting, Commodore Hotel, New York, N. Y.

MARCH 16-18: American Institute of Chemical Engineers, Atlanta Biltmore Hotel, Atlanta, Ga.

MARCH 24-26: The National Paper Trade Assn., Annual Meeting, Waldorf-Astoria, New York, N. Y.

MAY 5-8: Third Coating Conference of the Technical Assn., of the Pulp and Paper Industry, at the Sherman Hotel, Chicago, Ill.

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SUN LUBRICANTS AND SERVICE HELP KEEP OPERATIONS EFFICIENT

Five years ago, when this mill was being erected, the management called in a Sun representative and asked him to make a study of the oil and grease requirements. His recommendations were accepted. Ever since, the mill has enjoyed nothing but trouble-free operation, thanks largely to these Sun "Job Proved" lubricants. Sun makes periodic checks of the mill's operations in order to keep recommendations abreast of any changes. In this way, Sun prevents lubrication trouble before it can start. To the mill, complete reliance upon Sun service has meant continuous, profitable operations, simplified purchasing, small inventories of oils and greases.

A good example of the kind of service Sun can furnish your mill is help in converting drier roll bearings from block grease to oil. Such conversion of older machines results in less downtime, lower maintenance, lower power consumption and higher output. If you would like a free folder on the subject, just write to Department PT8.

BECAUSE IT DOESN'T SQUEEZE OUT under heavy tooth loading, Sun 807 Grease minimizes wear on the drive side of the paper machine. It doesn't drip off the gears, needs fewer applications, and is easily used without the preheating so many gear shields require.

DESPITE THE VARYING CONDITIONS encountered on this paper machine—some bearings constantly washed with water and others heated to temperatures over 300° F—Sun lubricants have always given outstanding service. Time out for repairs is practically unheard of.

HOLDING WEAR TO A MINIMUM on the heavily loaded thrust bearings of a Jordan is a tough lubrication assignment. The Sun "Job Proved" oil used in this Jordan has the film strength to stand up to the loads, the proper viscosity to lubricate well at high speeds.

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, October 31, 1951.

Hi-lights of today's business as they they relate to paper and board demand are these:

Slight Gain in Retail Volume

Retail buying for the week ended October 24 showed a slight gain in dollar volume. Factors in the estimated increase of 1 to 5 percent were cool weather and promotional efforts which stimulated early Christmas shopping.

Accented in the buying were apparel and footwear. Household goods also took a boost; television and hunting equipment mounted in volume; automobiles reported a steady demand for new cars, a slight dip in used ones.

National Summary by FRB

Industrial production and employment have remained somewhat below the advanced levels reached the spring of this year, reports the Federal Reserve Bulletin. The Board's industrial production index was 219 percent of the 1935-39 average in September, as compared with 217 in August and with 223 in April.

Lack of customers and not of material is holding down output, says the FRB. Consumer spending in the second and third quarters was 61 percent after taxes for goods, down six points from the 1947-49 average of 67 percent.

Defense Expenditures Rising

Defense expenditures in the September quarter amounted to $38 billion at annual rates, as compared with $12 billion in the pre-Korean period. Rising defense requirements, together with related plant and equipment expansion programs are the chief dynamic influences in the current business situation, the OBE, U. S. Department of Commerce reports in the October issue of *Survey of Current Business*.

The report further indicated that there "has been a gradual transfer of material and man-power resources into the growing defense and defense-supporting activities . . . facilitated by the decreased demands of the civilian segment of the economy. There has been less nonindustrial construction, less inventory accumulation and less final consumer demand."

Textile Industry Listless

Outlook for the textile industry in some quarters is one of deterioration for the immediate future. A further cut in the output of rayons and acetate filament yarns indicated that hope for pickup has ebbed. Demand for cottons also dipped, and little hope is held for a large-scale revival in the fourth quarter. Prices of prints were cut from one-quarter to one-half cent below mill quotations.

Inconsistencies a Sore Thumb

In this gearing period for Defense which the Department of Commerce calls a "gradual transfer of material and man-power resources," inconsistencies develop which stick out like a festering thumb. Doubtless many of these will be resolved with time, but men grow impatient and confused.

Cited are a few which are major gripes.

Says a leading article in the *Sunday Times* (N.Y.): "Steel men see overproduction nearing fast as demands ease. Inquiries for structural and conversion items declining, despite government estimates of shortages. . . . The steel industry felt that the demand for these products was inflated through a tendency of contractors to seek their total requirements for various projects at once, rather than ordering only as they needed the steel."

Store Salvage-Packaging

Another and perhaps more marked inconsistency to this industry is in the salvage packaging program adopted by some department stores in compliance with the Government's request to conserve wherever and whenever possible.

A printed slip accompanies delivered packages which are wrapped in reused boxes and tissues suggesting that the customer will agree it is more important to cooperate with this request than to maintain customary high standards of packaging.

Granted there may come a time when paper and board conservation will be necessary to Defense. But when board mills are closed for lack of orders, when price slashing from the $120 level to $100 is done just to get business, salvage campaigns of this sort are, to say the least, inconsistent.

Foreign Markets and Overproduction

Another headline worth noting is that which relates overproduction to the value of foreign markets.

"Despite its preoccupation with domestic selling problems, Worth Street — (New York Cotton Mart) — has never overlooked the importance of maintaining a flourishing foreign trade. The necessity for exporting about 10 percent of the industry's production is better appreciated along Worth Street now than probably at any time in the past. For example, in the light of current and recent conditions, how could Worth Street possibly have absorbed the 535 million square yards of cotton textiles that it shipped to overseas markets in the first eight months of the current?" asked the *Journal of Commerce* writer in a timely tie-in with National Foreign Trade Council Convention, meeting this week in New York.

Pulp and Paper Export Markets

What is true of cotton textile surplus may also be true of paper and board at some time in the near future. For should the Defense program lag in the face of a Korean peace and barring new international crises, then overproduction — or underconsumption — could develop in more than textiles, steel and paper boards.

The general subject of foreign trade and developing international markets will be more fully discussed in next week's issue with a report on meetings of NFTC. This is by way of pointing up a further inconsistency in the gearing to Defense—a matter which tries men's souls.

In devotion to the needs of U. S. market pulp consumers and their relation to Defense planning, NPA and OPS have given tremendous study to supply, distribution and pricing of market pulps.

To make certain that premium prices in world markets would not woo needed tonnages of U. S. pulps from domestic mills, OPS set strict limits on export pricing; and OIT placed pulp export under license and quota restrictions based on the exporter's historical record and the Office of International Trade's information and judgment.

Major gripes from exporters center about OIT delay in notifying exporters of their allotments. To press time, on October 31, fourth-quarter allotments had not been announced. Lacking assurance that licenses will be granted, producing mills are unwilling to set aside tonnages for export; and exporters cannot sell their traditional markets for want of assurance that they can get the pulp from the mills.

Late information tells of plans to wipe out this special export pulp difficulty. It is reported that the annoyances which have irked exporters during the last months have been well-presented to the interested Government agencies, and that the first quarter of 1952 will see a system evolve which will be more smooth, more prompt, and generally more satisfactory to those who feel that overzealousness to domestic mills has amounted to discrimination against a legitimate U. S. business.

Foreign markets should not be neglected with a softening of pulp supply likely in the coming months of underconsumption. It is hoped that OIT will act quickly to put into operation the planned improvements in export licensing.

— E. P. N.

Paperboard Production (Tons)*

	Oct. 31 1951	Oct. 13 1951	Oct. 20 1950
Production	217,734	211,413	235,388
New Orders	168,866	171,817	196,950
Unfilled Orders	429,639	486,887	715,451
% of Activity	89	90	101

* Source: NPA.

A Screen-Vat Assembly Well Worth Considering

Operators considering the erection of new board mills, the installation of additional cylinder machines, or the rebuilding of old ones, should seriously consider this special B-C Screen-Vat assembly.

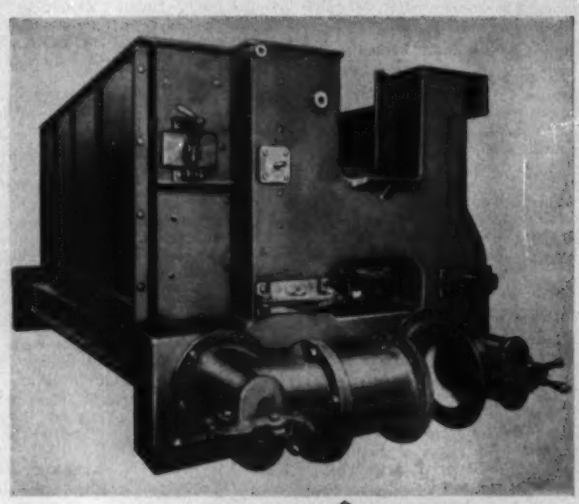
Shartle Selectifier Screens ahead of the vats (both liner and filler) for final cleaning and fiber bundle breaking. No mix boxes required.

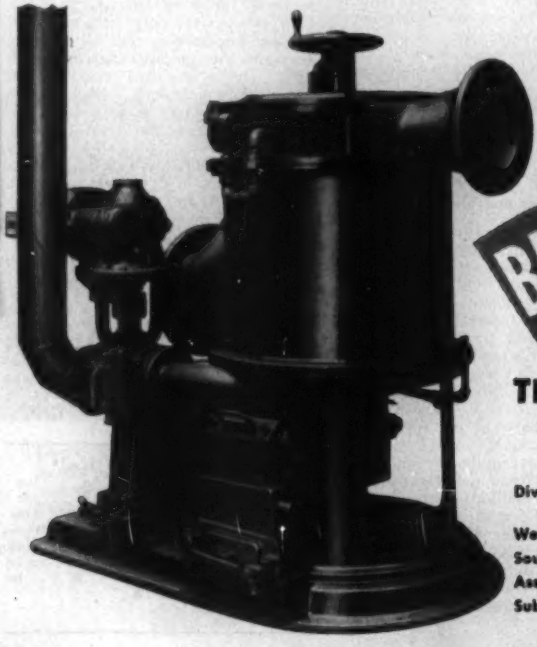
Black-Clawson precision built vats incorporating vat circles, sides and partitions individually engineered for maximum efficiency and strength to withstand hydraulic forces at work.

Each vat individually engineered for your specific papermaking requirement. Over seventy-five years of experience in paper machine "know-how" incorporated in every vat that leaves the Black-Clawson plant.

Mills that install Selectifier Screens in lieu of flat screens—B-C "Job Engineered" Vats with specially designed inlets—will benefit far more than they realize.

Full particulars upon request.





Black-Clawson Uni-flo Vat

Shartle Selectifier Screen

BLACK-CLAWSON

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Hamilton, Ohio

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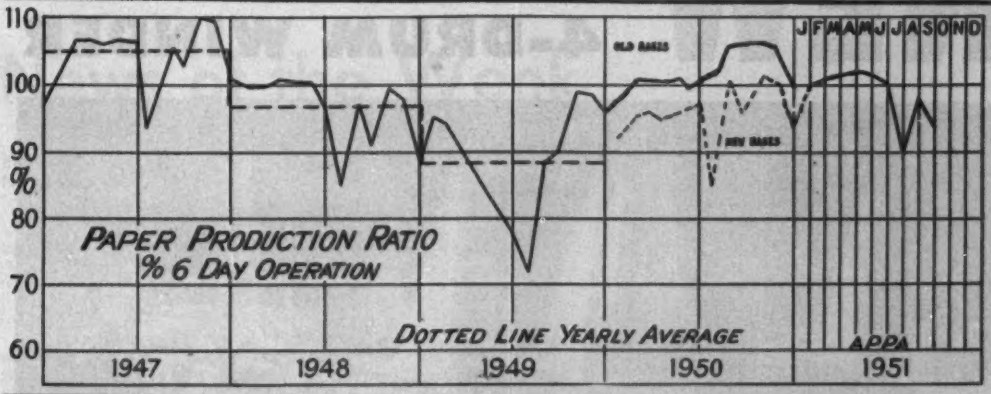
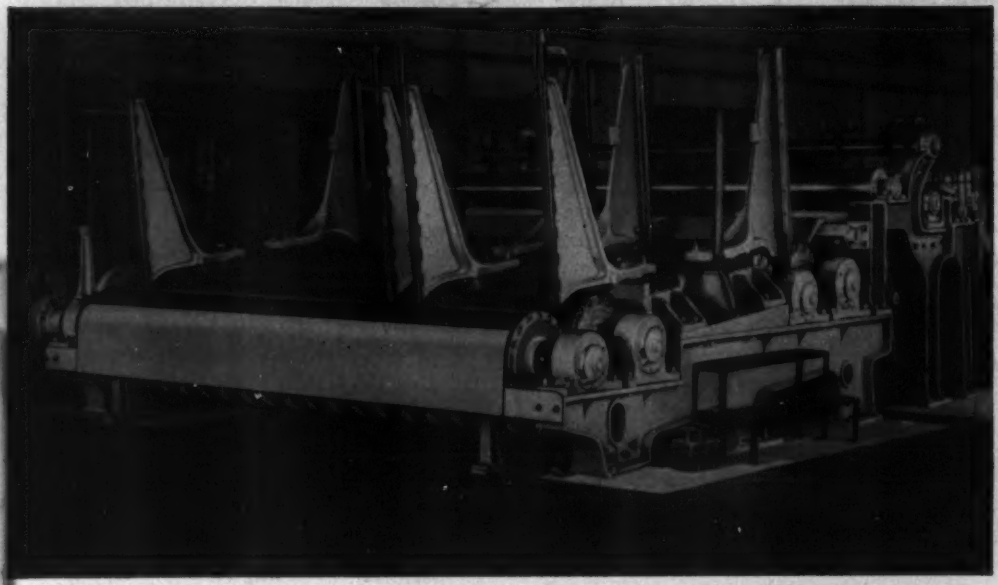


Brief of Important Figures

Source	Production	WEEK ENDING Oct. 20, '51	Sept. 22, '51	Oct. 21, '50
APPA	Paper Production Percent Capacity[2]	102.1	99.5	101.4
	Unbl. Kraft Paper Production Percent	100.4	97.9	96.8
NPA	Paperboard Operating Ratio Percent Inch Hours	89	90	101
		Aug. 1951	**July 1951x**	**Aug. 1950**
APPA	Paper Production[4] (Except Newsprint and Building Papers) ....Tons	925,500	808,000	865,000
	New Orders ....Tons	875,000	848,000	979,000
	Unfilled Orders ....Tons	1,001,800	1,035,765	863,500
	Shipments ....Tons	906,000	796,000	873,500
		Sept. 1951	**xAug. 1951**	**Sept. 1950**
NPA	Paperboard Production ....Tons	816,356	1,112,731	877,945
	New Orders ....Tons	825,249	1,081,321	872,012
	Unfilled Orders ....Tons	458,150	470,841	714,877
	Our Customers Activities Index[1]	**Latest Mo.[6]**	**Previous Mo.[6]**	**Year Ago[6]**
FRS	Manufactures Total Index	230	234	221
	Durable Mfg. Index	272	267	249
	Nondurable Mfg. Index	197	190	198
	Chemical Products Index	304	301	265
	Mfg. Food Products Index	184	176	189
	Printing and Publishing Index	169	155	161
ODC	Magazine Advg.-Printer's Ink Index	376	368	341
	Retail Sales Combined Adjusted Index	381.1	372.0	369.3
	Drug Index	244.4	247.3	235.4
	General Merchandise Group Index	417.6	402.8	406.2
	Grocery and Combination Index	452.8	439.1	402.2
	Prices Index			
BLS	Consumers Price Index[1]	185.5	185.5	173.4
	Wholesale all Commodities[3]	178.0	179.5	166.4
	Wholesale Foods[3]	187.3	186.0	174.6
	Commodities other than Farm Products and Foods[3]	167.3	168.7	155.5
	Wholesale Pulp and Paper[3]	198.7	197.2	163.9
	Purchasing Power of Dollar, Consumers Prices[1]	53.9	53.9	57.7
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	429.4	425.5	394.4
	Unemployment Compensation Initial Claims (M)	950	1,086	641
	Miscellaneous Carloadings-Thousands of Cars	1,533	1,454	1,574
	Electric Output (Million KW hr.)	37,510	35,435	33,943
PTJ	Average 32 P & P Common Stocks as of Oct. 27	$38.44	$40.03	$34.43

[1] 1935-39=100 Unadjusted Index
[2] 1936=100
[3] New 6-7 day basis.
[4] For Five Weeks.
[5] For details see APPA Monthly Statistical Summary—August 1951 Estimated Figures
[6] Latest Month Available on Request
x Revised figures

NEW MOORE & WHITE 4-DRUM WINDER



HERE is an expertly engineered and precision-built *heavy-duty* 4-drum board winder—fast, efficient and dependable to fit the tempo of today's demands and operations. It is operated by a Moore & White mechanical drive, and all moving parts run in anti-friction bearings. It is equipped with M & W shear-cut slitters to insure clean edges to the rolls.

This new Moore & White winder will wind rolls up to 84 inches in diameter. It is available in widths up to the maximum requirements of modern paperboard mills. We can equip it with automatic roll ejectors which permit the completed rolls to be quickly and easily removed from the winder drums without being tended or handled by an overhead crane.

Write or call us today for more detailed information. Our sales engineers will make a prompt survey of your requirements and oversee the installation of the Moore & White winder or other equipment you need for faster, more trouble-free and more profitable operation.

The MOORE & WHITE Company
15th STREET & LEHIGH AVENUE - PHILADELPHIA 32, PA.

Represented on the West Coast by Dan E. Charles Agency, 618 Jones Building, 1331 Third Avenue, Seattle 1, Wash.

***Above**—Moore & White 4-drum board winder equipped with Moore & White shear-cut slitters*

***Above**—Moore & White 4-drum winder equipped with automatic roll ejectors*

CUSTOM-BUILT MACHINES FOR MAKERS OF PAPER AND PAPERBOARD

News of the Week

Paper TRADE JOURNAL

BREAK GROUND FOR NEW NATIONAL CONTAINER MILL

Ground was broken October 26 at Clyattville, Ga., for the new 500-ton per day kraft pulp, board and paper mill National Container Corp. is building to add 50 percent to its annual production capacity. This will be National's sixth mill.

Ceremonies marking the start of the project were held at the 275-acre mill site contributed by this community under leadership of the Valdosta and Lowndes County Chamber of Commerce. Several hundred business firms, professional men and other citizens created the special fund to acquire the mill site at Clyattville, about nine miles south of Valdosta and approximately the same distance from the Florida state line.

The entire board of directors of National Container, together with other officers and key plant management and sales personnel attended the ceremonies and a dinner at the Valdosta Country Club tendered by the Chamber of Commerce. Among other guests were executives of the Marine Midland Trust Co. of New York, Halsey, Stuart & Co., Inc., and Van Alstyne, Noel & Co., investment bankers, Central National Corp., and Merritt-Chapman & Scott Corp., with whom a contract has been signed for building this mill. Merritt-Chapman & Scott have built several of the largest units in the paper industry including National Container's Jacksonville, Fla., mill. Also present was L. Morris Mitchell, who will supervise purchasing and construction of the new mill for National.

B-C GETS SWEDISH CONTRACT

A complete new seven cylinder board machine by The Black-Clawson Co., and all major items of stock preparatory equipment for the three Hydrapulper filler stock and liner system by Shartle Brothers division will be in operation early in 1953 at the Fiskeby Fabriks A.B. near Norrkoping, Sweden —100 miles south of Stockholm.

The new Black-Clawson machine will trim 140" of high grade liner board and will feature a combination of overflow and counterflow vats, overhead primaries with short top felt and floor mounted main presses.

The dryer sections comprise 60" Seamless dryers in double deck arrangement with top dryer felts, followed by two calenders and a B-C pope type reel. The machine will be equipped with all the latest remote control features.

A continuous Hydrapulper will furnish stock to the Shartle filler stock cleaning system, while two batch type Hydrapulpers will supply the requirements of the top and bottom liner systems. A new automatic Shartle "Duo-cycling" System featuring Duotrol equipped Hydrafiners will comprise the top liner system. Miami No. 2-A's will do the jordaning.

NEW MACHINE FOR MEXICO

HUDSON FALLS, N. Y. — Prominent Mexico manufacturers negotiated for the delivery of final equipment for completion of a new paper machine being built at Monterey. The company is owned by the Garza's, a family of several brothers who also own other large manufacturing interests. The Sandy Hill Iron and Brass Works, Inc., is supplying equipment for the entire mill which is designed for two machines. It is expected that the first machine will be ready for production within about four months and will produce kraft paper for bags of all kinds. The machine will have a minimum production of 30 tons daily. The mill is owned by Productora de Papel S.A. A new power plant has been built as part of the expansion plan with the economic help of National Financiera S. A.

NEPCO GRANTS $7,800 FOR STUDY OF INSECT DAMAGE

Further research into the problem of insect infestation of pulpwood has been made possible through a $7,800 grant by Nepco Foundation, Port Edwards, Wis., to the University of Wisconsin. This recent grant brings the total to $14,100 the Foundation has assigned for this project.

This industrial research project was established in 1948 to study insect damage control in stored pulpwood and prevention of damage to adjacent timber. At that time a grant of $6,300 was turned over to the University by the Foundation, covering the research for a three-year period.

This month the first installment of a $7,800 grant was paid to the University for a three year extension of the insect studies, continuing to March 31, 1954.

The project has been assigned to the department of entomology, under the supervision of R. D. Shenefelt, research assistant.

SWEDEN TURNS TO S. A.

It has been reported that manufacturers of woodpulp and paper in Sweden, who already have established plants in southern Chile to exploit that region's rich coniferous forests, and conveniently located waterfalls cascading down slopes of the Andes Mountains, are moving to the eastern side of South America, where they will tap the world's largest reserve of fast-growing softwoods on the banks of Parana River, in Paraguay and Argentina.

I. Froelander, chief engineer of the Robertfors plant for chemical pulp at UMEAA, in Sweden's far-northern Norrland province, is quoted by Svenska Dagbladet, of Stockholm, as saying that the Robertfors plant will be dismantled and shipped to the Misiones territory, to be set up on the Parana.

Mr. Froelander, who has just returned from that region, reported that huge stands of Brazilian pine will furnish ideal raw material for the production of sulphite-treated cellublose, and of good quality paper.

Its fiber is twice as long as that of Swedish spruce and fir, and measures up to 3½ inches.

CHISHOLMS SELL OXFORD STOCK

The Hugh J. Chisholm family, who own controlling interest in the Oxford Paper Co., will sell almost 50 percent of their common stock in the mill, it was revealed on October 29.

The First Boston Corp., investment firm, announces it is forming a group to distribute to the public 163,675 of the 300,044 common shares owned by Mr. Chisholm and 32,000 of the 64,000 shares owned by his wife. Mr. Chisholm at the present time owns 39.4 percent of all the common stock and Mrs. Chisholm 8.4 percent.

After this sale, Mr. Chisholm's holdings will be reduced to 22.1 percent and his wife's 4.2 percent.

APPROVE FLOOD CONTROL PLAN

NORTH ADAMS, MASS.—Three Massachusetts projects calling for the expenditure of $825,000 were among those approved for river and harbor construction and flood control by a Senate-House conference committee.

The projects involved $200,000 for work in Fall River Harbor, $225,000 for flood control at Adams and $400,000 for flood control in North Adams.

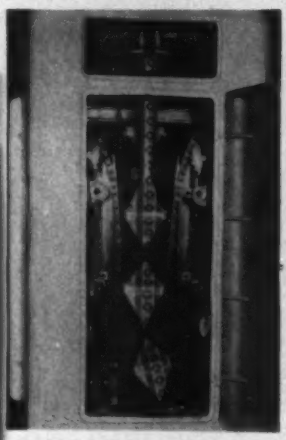
Only other New England project approved called for $3 million for the Mansfield Hollow flood control reservoir in Connecticut.

NEW PAPER USES

A New Paper Bottle

A new way of packing milk and other liquids, such as oil and fruit juices, has been announced by AB Tetra Pak of Lund, Sweden. This company has developed a new package and packing machine called Tetra Pak.

Tetra Pak makes it possible to use a smaller sheet of lighter paper. Tetra Pak is a tetrahedron that is a regular 3-sided pyramid with congruent triangles for base and sides. This means that on whichever side the package happens to stand, it always stands right end up, because all the 4 sides are equal.



The Tetra Pak machine takes a web of plastic-coated heatsealing paper and forms it into a tube. The long seam of this tube is heatsealed. During a continuous movement downwards the tube is then pressed together by pairs of heatsealing irons or jaws mounted on endless chains, which move downwards at the same speed as the tube. At the same time liquid is filled into the paper tube through a supply pipe from above.

The level of the liquid is kept above the seals just being formed. Thus the heatsealing irons push away the surplus quantity of liquid in the tetrahedrons they are forming. The quantity of liquid in the Tetra Pak is determined by the diameter of the tube-forming tool and the distance between two consecutive pairs of heatsealing irons. You need no scales, no volume filling apparatus, simply nothing—and you get a variation in contents that is much less than that of the milk in standard Swedish glass bottles.

Rug-Backing Yarn

A new rug-backing yarn, made of paper wrapped about a core of Fiberglas strands and said to have a number of advantages over cotton, jute and other materials, is now being used successfully on a limited scale by leading carpet manufacturers, according to officials of E. W. Twitchell, Inc., of Philadelphia, manufacturer of the yarn.

The yarn's major applications to date are as both chain warp and filling for velvet and cotton pile scatter rugs and as chain warp in Axminsters as well.

It is claimed that the new yarn, called Textilene Glascor yarn, costs 40 percent less than cotton and effects additional savings in the cost of manufacturing. In addition, since it is man-made it has good uniformity of diameter and strength and can be engineered into a wide range of tensile strengths with little or no change in bulk. It also provides carpet manufacturers with a stable, domestic source of supply for rug-backing yarns.

Two representatives of The Upson Co., Lockport, N. Y., ventured out into the harbor at the Olcott Yacht Club on Lake Ontario in this unusual rowboat constructed of the company's newest product, Upson Strong-Bilt Waterproofed Panels, which are intended for full-wall dry-built construction of interiors and definitely not for boats! Averill E. Calver, left, director of advertising and public relations of The Upson Co., conceived and designed the boat to introduce the new waterproofed panels. With him is Richard A. Butcher, development engineer in the company's Research Department.

solves microbiological problems

Mill experience proves that Santobrite (sodium pentachlorophenate, technical) effectively controls paper mill microorganisms that cause slime, stain and decay of pulp logs, degrading of stored pulp lap, spoilage of pulp stock, spoilage of coating materials and mildew in finished products. Santobrite also is used to prevent mold in casein-coated soap wrappers.

Santobrite is chemically stable, noncorrosive to metals and relatively nonvolatile. Manufactured in pellet, briquette and powder form, Santobrite is easy to apply, requiring no expensive special equipment. Properly handled and applied, it is not hazardous to the health of mill operators or consumers of the finished product.

For technical information on the use of Santobrite, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Mo.

Santobrite: Reg. U. S. Pat. Off.

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CHEMICALS — PLASTICS

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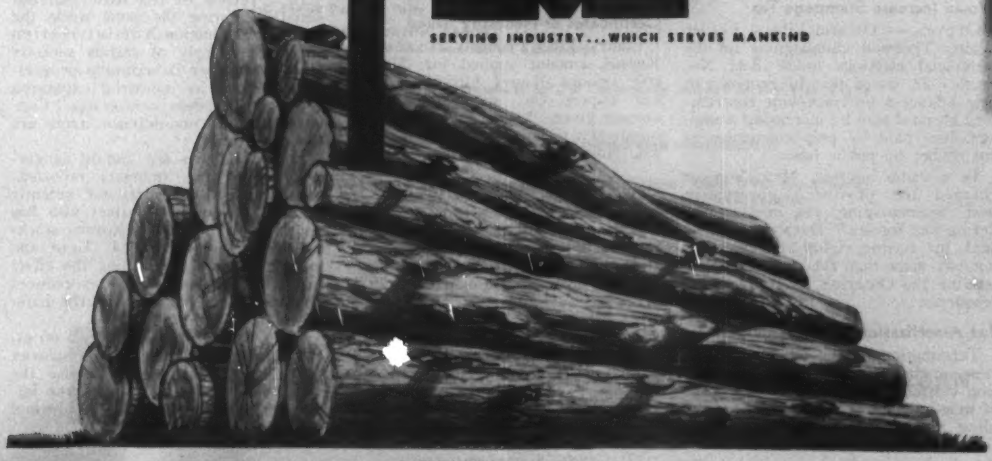


GOVERNMENT GOSPEL

Defer Construction of Power Plants

WASHINGTON, D. C. — Interior Department plans for construction of several steam power plants in the Pacific Northwest were shelved at least until next session by the House Rules Committee.

Although the plans were approved a week earlier by another House committee, the Rules Committee has voted to defer House action on the bill.

Oppose Sulphur Limitations

WASHINGTON, D. C.—Proposed limitations on sulfur and sulfuric acid use by NPA are meeting with opposition in the chemical industry, it was disclosed following a meeting between industry advisors and the NPA's representatives.

Complaints were heard that the advisory committee was not consulted by NPA before the proposed action was ordered. One advisory committee member felt that it is unfair for NPA to limit certain users of sulfur and sulfur derivatives, without limiting all, while another committee spokesman said if the Government "let Nature take its course" the problem would right itself.

However, NPA officials said the implementing orders had not yet been issued, and the committee's recommendations could be considered. Other industry men felt, nevertheless, that the DPA program already had been determined, and any other action now would be objectionable.

As to letting the situation handle itself, NPA officials pointed out the shortage already was here, making further regulation necessary. The proposed program would limit use of sulfur for production of sulfuric acid and carbon bisulfide to 90 percent of 1950 rate except for sulfuric acid output for essential programs.

Would Increase Stumpage Tax

OTTAWA — Ontario Liberal Leader Walter Thomson, campaigning for the provincial elections to be held November 22, stated that he proposes to help finance a province-wide contributory hospital plan by increasing stumpage dues paid by pulp companies to cut timber on public lands.

In a radio address, Mr. Thomson charged the provincial government with "mismanaging, yes, even squandering our forests." Dues charged, he said, for cutting rights of timber did not pay more than the cost of administering the Ontario's land and forest resources.

Tax Amortization Moratorium Ends

Termination of the 60-day moratorium on the issuance of tax amortization certificates and the establishment of new procedures and criteria for the filing and processing of applications were announced by the Defense Production Administration. Under its revised procedures DPA will publish a formal order of preference based on the degree of essentiality of the production involved which will determine the order in which all applications will be processed hereafter.

In the initial stages, priority of treatment will be given applications involving production of the following facilities in the following sequence:

1. Machine tools, cutting tools, dies, gauges, jigs and fixtures.
2. Ores such as copper, lead and zinc.
3. Pig iron.
4. Sulfur.
5. Military end items and supporting products urgently needed by the Armed Services.
6. Basic aluminum.
7. Nitrogen.
8. Aviation gasoline.
9. Steel scrap.
10. Special aluminum extrusions.

DPA emphasized that the order of priority and the priorities themselves will be revised from time to time as conditions warrant.

CMP Allotments 1st Quarter 1952

General Industrial Equipment Division*

	1st Quarter 1952	4th Quarter 1951
Steel	500,436 tons	866,500 tons
Copper	41,905,000 lbs.	6,020,000 lbs.
Aluminum	17,000,000 lbs.	14,700,000 lbs.

Pulp, Paper and Paperboard Claimant Agency

	1st Quarter 1952	4th Quarter 1951
Steel	1,170 tons	1,000 tons
Copper	22,000 lbs.	5,000 lbs.
Aluminum	25,000 lbs.	50,000 lbs.

* This division covers some twenty-eight types of industrial machinery; pulp and paper, bottling, chemicals, textile, rubber, bakery, petroleum, pump, compressors, elevators, spraying, air conditioning, refrigeration, etc.

Certificates of Necessity Issued

Central Fiber Products, Hutchinson, Kansas, amount applied for, $1,370,000; amount allowed, $466,414. Groveton Papers Co., sulphite pulp, no amount given. Taylor Fiber Co., fiber, no amount given. Fort Howard Paper Co., pulp, no amount stated.

Allotments For Machinery Mfrs.

WASHINGTON, D.C.—Pulp and paper machinery manufacturers will get in the first quarter, 1952, controlled materials allotments at least 75 percent of those in the fourth quarter of 1951, NPA has advised industry representatives.

However, said the agency, the first quarter stainless steel allotment will be only 54 percent of the fourth quarter figure; for other materials the first quarter allotment will be:

Carbon steel, 75 percent of fourth quarter; alloy steel, 96 percent; brass mill products, 85 percent; wire mill products, 72 percent; foundry products, 82 percent and aluminum, 82 percent.

Notice of the exact allotments were mailed to the industry. Industry members have reported that their fourth quarter allocations had permitted them to operate at about 50 percent of their total capacity, against demands that amount to 150 percent of current production.

The NPA renewed an earlier suggestion that the industry turn more to subcontracting for machine tool builders; in support, the agency said machine tool builders will be getting materials, while "no immediate relief can be seen for other capital goods manufacturers whose products are not as vital to rearmament as machine tools."

Review Certificates of Necessity

WASHINGTON, D. C. — A newly-formed committee to report on the effect of tax amortization in negotiated contracts has begun a review of certificates of necessity already granted, for expansion of essential production, and is to report to NPA officials later.

Following a meeting with Manly Fleischman, Defense Production head, it was stated further meetings will be necessary before definite recommendations can be made to help determine what portion of tax amortization is appropriate to allow as a cost in negotiation of government contracts. The committee was formed at the time that a 60-day moratorium on issuance of tax certificates was ordered. The moratorium has now terminated, and tax certificates are again being approved.

Meantime, an order of priority, in relation to the importance of the product concerned, has been established for approval of certificates. Emphasis is on expansion of lead, zinc, and copper, which metals rank second in line, and sulfur, fourth. Machine tools and other heavy equipment are first.

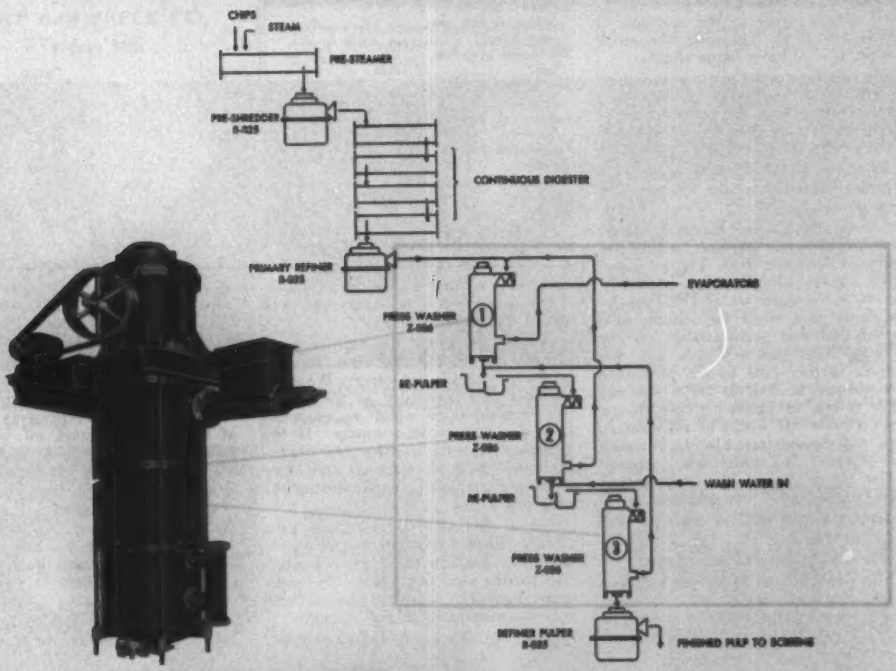
In a review of the basic material situation, during the same week, the Defense Production Administration stated the supply of metals such as steel and copper is becoming progressively tighter as industrial expansion for defense needs accelerates. Conversely, some non-defense items are tending to ease.

Copper supplies are "almost dangerously short" the summary reported; suspension of tin purchases recently because of excessive prices also has considerably lowered industrial stocks of tin, the report added. Lead and zinc production are feeling the effect of recent strikes as well as reduced imports. Magnesium has nearly maintained its position.

Heavy chemicals have shown no essential change; among the secondaries those easing just about balance the ones that have eased, among the latter are phenolic resins and polyvinyl alcohol.

DIGESTION
REFINING
WASHING

*in a continuous system**
featuring the J-C
ZENITH PRESS WASHER



ECONOMY IN MATERIALS OF CONSTRUCTION
J-C Zenith Press saves valuable floor space, occupies only a 5 ft. square.

SAFE, SIMPLE OPERATION
J-C Zenith Press is fully automatic.

ECONOMY IN OPERATING LABOR
J-C Press eliminates the need for an operator.

ECONOMY IN WATER
J-C Zenith Press operates successfully at 8% consistency instead of the 1 to 1½% of conventional systems.

ECONOMY IN HEAT
J-C Zenith Press adds steam after pulp has reached high consistency.

ECONOMY IN POWER
J-C Zenith Press uses no vacuum pump or other auxiliaries. Only 1/9th the quantity of water circulated makes possible savings in smaller motors and pumps.

GETS PULP CLEANER

* *Pat. Applied for*

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A PRODUCT OF

JACKSON & CHURCH COMPANY, SAGINAW, MICHIGAN

WORK WELL DONE SINCE '81

Some new groupings of "most critical" items includes aluminum, lead, tin, zinc, copper, platinum, cobalt, columbium, molybdenum, nickel and tungsten.

The current shortage of copper materials is expected to continue through the first quarter of 1952, it was stated.

WHAT'S GOING ON?

What's going on in Washington? That's the perennial question on everyone's tongue; just as the question in everyone's mind regarding the stock market is: "What's happening?"

It's anyone's guess what is going on in the Capital, and what the market is up to. With all of the economic services going the rounds, there seems to be more guess than fact.

As to the facts, somehow they never are clear, as one would suppose that they should be.

Several things are however apparent. One is that business profits are definitely off from 1950. The FTC and SEC reports all show a falling off for the second quarter of 1951. Analysis shows that while the volume held up through that period, *taxes cut the profits.* With the new tax bill just passed, further cuts in net profit are now certain, so long as OPS does not allow a rise in prices to compensate. Such a price lift would be inflationary as is well demonstrated by the Swedish Pulp Export Tax which was supposed to be taken out of the pulp selling price, but actually was added to it.

Thus it seems we can count on less net earnings.

The market has reacted to this.

To the above can be added that business volume is down, for the third quarter, because of material shortages, change-over to Defense goods, and because the volume of Defense production has not begun to replace the drop off in civilian production.

Coupled to this is the high level of inventories of all types of finished goods for civilian consumers. We must consider this inventory as the fat of our economy upon which we must depend for our civilian supply. If the Washington indications are right, there will be little material and labor to fill our civilian demands during the next few years.

Let us consider our economy as a 12-inch rule. From the beginning to the 3-inch mark is the civilian production for the next few years. The minimum amount possible in this twilight zone between danger and strength.

Next we should consider the other end, from 12-inches down to 10-9-8 or possibly 7-inches. This is the armed forces take of our output. This amount may vary all over the lot depending on hundreds of factors.

That which is left in between is for the so-called defense supporting industries. This group represents the base of our economy, steel, oil, paper, and transportation, etc. As nearly every industry is in this group, it's where the pinch comes.

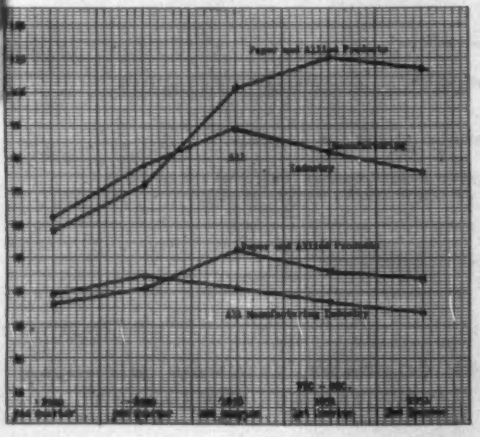
It's part of the reason why third quarter net profits do not look as good as those to which we have been accustomed, and fourth quarter profits may be even less.

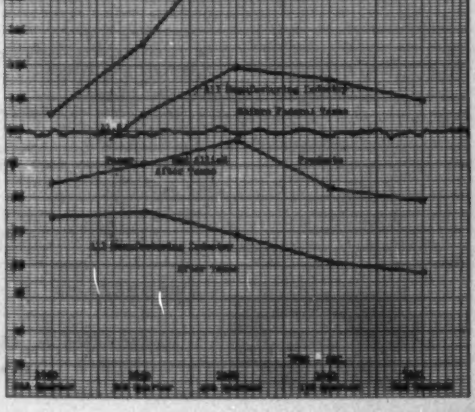
Thus we arrive at a state where everyone assumes a worried air and asks, "What's going to happen?"

Quarterly Earnings Paper and Allied Products
Millions of Dollars

	2nd Quarter 1950		1st Quarter 1951		2nd Quarter 1951	
Net Sales	$14.50		$2,077		$2,091	
Cost & Expense	$1,255		$1,686		$1,685	
Net Operating Profit.	$195		$412		$406	
Net Income before Federal Income Tax	$197	13.6%	$411	19.7%	$410	19.6%
Fed. Income Tax Provision	$75		$239		$244	
Tax/Sales		5.2%		11.5%		11.7%
Tax/ Net Income		38.5%		58.0%		59.5%
Increase 2Q1950 to 2Q1951 in Fed. Income Taxes						3.34%
Net Income after Fed. Tax	$122		$172		$166	
Net Income/Net Sales		8.45%		8.3%		7.5%
Surplus at end of Quarter	$1,816		$2,062		$2,157	
Depreciation and Depletion	$38		$44		$44	
D & D/Net Income		2.6%		2.1%		2.1%
Dividends	$36		$39		$47	
Div./Net Income after Tax		29.5%		22.7%		19.3%
Div./Net Sales		2.48%		1.88%		2.24%

Below—Profit Ratio, Stockholders Equity, Paper and Allied Products.
At Right—% Profits per Dollars of Sales, Paper and Allied Products.





8 WAYS that helped cut Accident Frequency 97%+

for WEST VIRGINIA PULP and PAPER CO.
Tyrone Mill

Explosive gas concentrations are detected with an M.S.A. Explosimeter before welding crews move in.

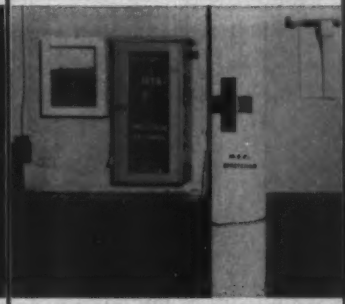
Potential carbon monoxide danger zones are probed regularly with the M.S.A. Carbon Monoxide Tester.

Where chlorine gas concentrations are present, workers are safeguarded with M.S.A. chlorine gas masks.

Harmful dusts, present during lime kiln operations, are combated with M.S.A. "Comfo" Respirators.

Light concentrations of chlorine gas and sulphur dioxide are trapped in the chemical cartridge of M.S.A. "Gasfoe" Respirators.

Smoke, fumes and gases are exhausted from enclosed areas with M.S.A.-Lamb Air Movers before workers enter.



Safety stations equipped with M.S.A. Industrial Gas Masks, First Aid Kits, and Stretchers are available for emergencies.

Emergency protection for chlorine plant workers is provided by M.S.A. Industrial Gas Masks in individual lockers.

Faced in 1944 with the worst annual safety record in the company's history, officials of the Tyrone (Pa.) Mill of the West Virginia Pulp and Paper Company decided to do something about it.

An intensive and continuing educational program, stressing the proper use of safety equipment, protective devices, and instruments, was put into operation. Within a six year period, the company's accident frequency rate had dropped from a record breaking high of 63.39 to an award winning low of 1.88.

Dependable M.S.A. equipment played an important role. The illustrations above show several ways in which this equipment is used to protect employees on the job and in emergencies.

If you're not satisfied with your present safety record, and would like to do something about it, you'll find a lot of sound safety know-how, backed by a complete line of proved safety equipment, at your nearest M.S.A. Office. Write, wire, or phone—we'll be happy to discuss your problems with you.

Call the M.S.A. Man on your every safety problem —his job is to help you

MSA
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- ☐ **Reprint PTJ-765 describing in detail the West Virginia Pulp & Paper Company Safety Program.**
- ☐ **Complete M.S.A. Catalog of Industrial Safety Equipment.**
- ☐ **Have a trained M.S.A. Sales Engineer call.**

Tear out this coupon, attach it to your company letterhead, sign your name and title, and mail to:

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From this office, it looks like a time for sober thought and reflection. We have a great many things in our favor. The Soviets have taken their first great diplomatic defeat, that of San Francisco. The Free Nations are bound stronger together than for a long period in the past. The British appear to be ending further costly experiments in Socialism. NATO is swinging from words to accomplishment. The Chinese appear to have had a bellyful and a truce in Korea may come at any moment. We have shown we can and will fight. *The Pulp and Paper Industry, from the profit standpoint, is doing better than the average of all manufacturing industry.*

We have to work as we never have worked before. We must make ourselves so strong physically, economically, and morally, *that peace will be the only alternative open to the aggressors.*

That's job enough for all of us; it will take all of our courage, labor, ingenuity, and patience. So far we have been doing this job rather half-heartedly.

Sure, profits are down, and may go even lower. The main reason is taxes. If half the effort was spent on cutting out waste and inefficiency that is spent on talk we would get somewhere.

Congress has gone home to put its ear to the ground. Now's the time to drive home to them that every expense not necessary to make us strong must be stopped.

You are in the driver's seat. Elections are coming up.

Henry J. Percy

PEOPLE

NORMAN W. WILSON, president of the Hammermill Paper Co., Erie, Pa., will observe his fiftieth anniversary of service with the Hammermill organization on November 9.

Starting with Hammermill at 16 as a mail boy and clerk, Mr. Wilson worked his way up through the ranks with successive service and promotion in the payroll, billing, traffic and sales departments. By 1913, he had become manager of sales.

In October, 1914, Mr. Wilson became a Hammermill vice-president. In May, 1929, he was named first vice-president and general manager. On October 10, 1940, shortly after the death of Ernst R. Behrend, Hammermill co-founder and first president, Norman Wilson became president of the company he continues to head.

EUGENE E. SCHNEIDER, a mechanical engineering graduate of Marquette University, Milwaukee, Wis., recently joined Nekoosa-Edwards Paper Co. mill power department.

Before coming to Nepco, Mr. Schneider was a boiler inspector with an insurance company in Milwaukee. Previously, he had been with the Babcock & Wilcox Engineering Co. in Ohio. A World War II veteran, he gained valuable experience as an assistant engineer aboard a destroyer. His background in power engineering is well adapted to the work of Nekoosa's mill power department, since the company's present modernization program calls for extensive changes and extension of the power system.

MALCOLM G. CHACE has resigned as a director of the International Paper Co. and MALCOLM G. CHACE, JR., has been elected to the board to fill the vacancy created by his father's resignation.

A director of International Paper Co. since April 26, 1922, Mr. Chace served for many years as a member of the executive committee of the company.

FOSTER P. DOANE, JR., has been relieved of his duties as plant manager at the Union Bag & Paper Co., Hudson Falls, N. Y., in order that he may devote all his time to technical sales.

He is also an assistant vice-president. Loren G. Gallup, supervisor of planning has been named to succeed Mr. Doane. CAPT. HERMAN BRADT, who joined the company as a consultant after his retirement from the Navy, will serve as assistant plant manager.

JOSEPH P. HABERMAN retired October 1 as superintendent of the Telulah Mill of the Fox River Paper Corp., after serving the Wisconsin rag mill for more than 45 years.

Mr. Haberman, who began his papermaking career as a screen boy at Fox River, has been Telulah Mill superintendent for the past 13 years. He is a member of the American Pulp and Paper Superintendents' Assn. He has been succeeded by ARNOLD G. BEAMAN, who had been superintendent of the Fox River mills of the corporation. Mr. Beaman left Detroit Sulphite Pulp and Paper Co. in 1941, where he was Night Superintendent, to join Fox River's technical staff as a chemist.

ALEX LAUX, who served under Mr. Haberman as assistant superintendent of Telulah Mill, is the new superintendent of the Fox River mill.

R. A. BUDINGTON, JR., has been elected comptroller of Rayonier Incorporated, manufacturer of purified wood cellulose. M. B. Houston has been elected assistant to the president. Prior to his new association, Mr. Budington was a resident partner and manager of the Boston office of Arthur Anderson & Co., certified public accountants, which firm he joined in 1934. Formerly representative of the company in the Northwest, Mr. Houston has been associated with Rayonier for the past 21 years. He will continue to make his office at Seattle, Washington.

SOUTH ADOPTS JOINT EDUCATION AND RESEARCH PROGRAM

Six schools of Forestry at universities in southern states recently adopted a far-reaching agreement under which they will develop joint education and research programs aimed at greater utilization of the South's most important single resource.

The agreement was signed at a Regional Education conference in Daytona Beach, Fla., by the presidents of Alabama Polytechnic Institute, Louisiana State University, North Carolina State College, The University of Florida, and the University of Georgia. President Hollis Edens of Duke University was unable to attend but advised the group that he would sign. Clarence F. Korstian, Dean of Duke's School of Forestry, is the Commission chairman.

The schools agree to send representatives to periodic meetings with Board of Control representatives to consider what each school is doing and to form a regional plan that will make the work of each more effective in light of the over-all region-wide program. Major research projects under way and intended will be listed and discussed so there can be an over-all unified objective to the research. The agreement states: "Each institution will consider needs of the region and activities and plans of other institutions in reaching decisions affecting training and research in forestry under its jurisdiction."

Referring to the economic importance of forests in the South, the report said:

"Approximately 198 million acres, or 55 percent of the land area of the 14 states, support or should be supporting some sort of forest growth.

"The timber crop is the most important single crop in the South. Thirty-eight percent of the lumber and roughly one-half of the pulpwood produced in the nation comes from the Southern forests. Returns to the South from three major forest industries — lumber, pulp, and furniture — exceed $4 billion annually. Over 600,000 persons are employed by these industries, in which more than $1.5 billion has been invested."

INDUSTRY OSCAR TO UNION BAG

In the final ratings of the independent board of judges in the Financial World Survey of Annual Reports, Union Bag & Paper Corp. was judged as having the best annual report of the paper products industry. The bronze "Oscar of Industry" trophy was presented to Alexander Calder, president of the company, at the Annual Awards Banquet in the Grand Ballroom of the Hotel Statler, New York, on October 29, 1951.

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Tileston & Hollingsworth, with mill at Hyde Park and offices in Boston, have been awarded a certificate of merit for outstanding contribution to the Red Cross Blood Program.

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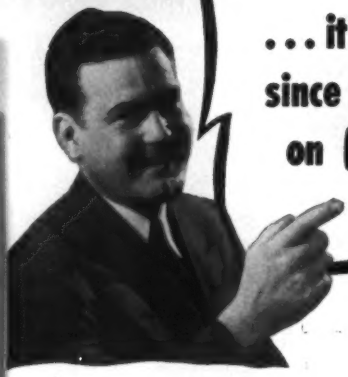

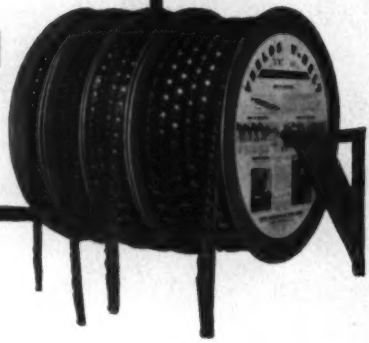

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MANHEIM, PENNSYLVANIA

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Kraft Pulp Bleaching In Four Stages[1*]

Fred W. Bishop

Chief Chemist, Southland Paper Mills, Inc.

Anyone concerned with the operation of a bleach plant is always interested in the process employed by another mill in performing this operation. The subject of this article is not intended to reveal anything new or revolutionary in the process of bleaching, but is merely intended to convey as concisely as possible the important features concerning the operation of the bleach plant at Southland Paper Mills. It should be pointed out that this plant is producing both semi-bleached and fully bleached pulps to be used in the furnish for the manufacture of finished newsprint and paperboard.

As the unbleached kraft delivered to a bleach plant is an important item governing the requirements for bleaching, it is advisable to review briefly the cooking procedure. The digesters are 2750 cubic feet in volume, heated with direct steam, and the liquor circulated from bottom to top. The vessel is loaded with 64,000 pounds of wood and 5,300 pounds of active alkali at 20 percent sulphidity to within 1025 cubic feet of total volume with black liquor as a diluent. Fifty minutes time is required to bring the contents to full pressure of 100 pounds and eighty minutes are required on full pressure. The yield is normally about 8.2 tons per digester at 95 Bjorkman permanganate number or approximately 19 TAPPI permanganate. There is no hot stock preparation employed between the blow tank and the washers. The rejects are removed by a single pass through a centrifugal knotter and finally through centrifugal screens. Flat screens are not employed on the whole stock for bleaching. Due to the high alkalinity of the fresh water and the residual alkalinity from the washing process, it has been advisable to acidify the pulp to a pH of 7.0 with sulphuric acid prior to its transfer to the bleach plant. This subject was covered in a paper entitled "Partial Acidification of Unbleached Kraft Pulp" by Bradbury, and presented at the 1950 joint meeting of the Southern and Southeastern Divisions of APPMSA.

The semi-bleaching of pulp to the extent of 180 tons output per day is effected in a simple three stage operation employing chlorination, caustic extraction, and high density sodium hypochlorite treatment. The unbleached pulp enters the plant through a De Zurik torque-type consistency regulator, being discharged into an Improved Paper Machinery metering device for the purpose of determining throughput. Generally 5½ percent chlorine is added at a single shaft chlorine mixer to the stock as it enters the bottom of the chlorination tower at 3 percent consistency. The retention time in the chlorination tower is thirty minutes at peak rates at an average temperature of 95° F. The stock is raked from the top of the tower by agitator arms into a peripheral launder, from which it falls by gravity to the basement floor where a pump raises it to the vat of an 8 ft. x 10 ft. acid-proof washer.

At the discharge of the chlorination washer, 2 percent of caustic soda is mixed with the stock in the presence of preheated caustic stage seal pit water to elevate the temperature of the mass to 140° F. The retention time in this tower is slightly over forty minutes at a consistency of 4 percent.

The stock proceeds from this tower over another 8 ft. x 10 ft. washer. It is discharged from this washer at 12 percent consistency and is moved by a screw conveyor to a belt conveyor which discharges it into a double shaft hypo mixer. The mixer is located on top of the high density tower, and it is used for the purpose of thoroughly blending approximately 2 percent available chlorine as sodium hypochlorite with the stock before it is discharged into the high density tank. The retention time is approximately ninety minutes and the temperature is, of necessity, about 85° F. to retard the reaction rate at the higher chemical-to-pulp concentrations of high density reactions.

A powerful and slowly moving agitator in the bottom of the high density hypochlorite tower with the aid of a small amount of dilution, moves the pulp into twin screws which convey it to a dilution tank. From this it is pumped to two 5 ft. x 7 ft. washers in parallel. The pulp is discharged at 12 percent consistency to a belt conveyor which moves it to a high density semi-bleached pulp storage tank. This tank is also equipped with an agitator to facilitate the dumping of this stock into a dilution tank immediately below. This semi-bleached pulp is then ready to satisfy the chemical pulp requirements of the newsprint operation or the manila back requirements of the cylinder machine.

The above stock is also transferred, after consistency regulation to 3½ percent, to a metering box which controls the throughput to the forth stage operation for full bleaching. At this box approximately .8 of one percent available chlorine as sodium hypochlorite is added along with a small amount of buffering caustic, and the temperature is elevated with live steam to 120° F. At peak production rates of 70 tons per day through this fourth stage, the retention time is 115 minutes.

The labor requirements of this plant are one operator, two helpers, and a tester.

A control testing procedure will be outlined which fully employs the available time of the tester to apply the maximum benefits of this work to the most efficient operation of the plant.

As the permanganate number is run on each cook as it is blown, and considerable storage from brown pulp is available for blending three or four cooks, this test is not run on the unbleached entering the bleach plant.

Consistency tests are run every two hours on raw stock to the plant and on semi-bleached entering the 4th stage for full bleaching. These consistency tests in conjunction with the integrator readings on the volume meters are used to determine the stock transfers at these points for any one operating day.

After chlorination in first stage, the washed stock is sampled at the drum discharge for the determination of pH to indicate the efficiency of acid removal by the fresh water drum showers and for permanganate number to determine the extent of lignin removal from the stock at this point.

These tests are run every hour and the permanganate number is particularly valuable in determining the efficiency of chlorination. They indicate the necessity of changing percent chlorine to effect optimum lignin removal at this point, and the hypo addition to the third stage can be adjusted to compensate for any variation.

From the caustic stage, the stock is sampled prior to washing for pH and

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*Presented before the Joint Fall Meeting of the Southeastern and Southern Divisions of The American Pulp and Paper Mill Superintendents Assn., Jacksonville, Fla., October 10-12, 1951.

[1]Presented by Jesse C. Bradbury, Administrative Assistant, Technical Service Department, Southland Paper Mills.

titration of residual caustic. Generally, with 2 percent caustic addition, the residual caustic will run 0.6 of one per cent at this point. From third stage high density hypochlorite at 12 percent consistency, the stock is sampled after dilution to 3 percent with fresh water for the determination of pH and residual chlorine by titration. With 2 percent hypo addition, the residual chlorine normally runs 0.1 of one percent. The pulp is sampled for brightness at the discharge of the third stage washers.

From the fourth stage, the stock is sampled from the tower discharge for pH and residual chlorine. With 0.8 of one per cent hypo addition, the residual chlorine normally runs 0.1 of one per cent. The pulp is sampled at the discharge of the fourth stage washer for brightness determination.

As the amount of fresh water available for bleach plant operation is rather low, it is customary to use only slightly more than 2500 gallons per minute for peak rates of operation and slightly less than this amount for the lower rates.

Approximately 250 gallons per minute are used on the drum showers of a washer in each of the four stages. This leaves a balance of 1500 gallons per minute for use as fresh water dilution in seal pit leg water and recirculation of this within each of its own stages. This amount of fresh water is split and added to the seal pit water of the third and fourth stages. Of course, this supplemental seal pit water is used for pulp dilution in the vat of each of the respective washers.

As a result of dilution, the overflow from the fourth stage moves into the first stage seal pit at an advantageous point in order that all of it may be picked up with the required balance being supplied from the first stage leg water to be used for pulp dilution in the vat of the first stage washer. The balance of the leg water from the first stage overflows to the sewer.

The leg water from the third stage is supplemented with fresh water and pumped to the vat of the third stage washer for pulp dilution. The overflow from the third stage seal pit moves into a compartment where it is supplemented with small amounts of caustic stage leg water prior to being pumped to the second stage washer vat for pulp dilution.

A stronger caustic stage leg water is pumped through a heat exchanger to the discharge of the chlorination stage washer for pulp dilution from 12 percent to 4 percent consistency before it enters the bottom of the caustic tower. This water is heated to supply the necessary temperature elevation to the stock during the process of caustic extraction. The balance of the caustic stage leg water overflows from the seal pit into the sewer.

The channeling of stock through low density towers contributed a very real problem as long as straight arms were used on the shaft of the agitator. For instance, in the chlorination tower, stock would travel from the bottom and be discharged at the top in ten minutes when the production rate indicated retention time of sixty minutes.

In 1945 the Improved Paper Machinery Company attacked this problem on location in this plant and built the first pump-impeller type agitator. This device actually transfers the stock from the center to the outside wall of the chest at each flight up the shaft.

At present, all three of the low density towers are equipped with these agitators; the chlorination stage is rubber lined, the caustic stage is mild steel, and the low density hypochlorite fourth stage in stainless steel. This type of agitator is one of the best known devices to insure that the maximum retention time will be obtained in any tower.

In an effort to avoid the use of live steam for heating the stock entering the caustic stage, it was advisable to use heated water from a heat exchanger to dilute the pulp as it was discharged from the chlorination washer.

To dilute pulp from 12 percent to 4 percent consistency and at the same time raise the temperature to 140° F., it was necessary that the diluent be at a temperature in xecess of 185° F. Excess leg water from the caustic stage washer was available for this purpose and its additional alkalinity could be used to an advantage in raising the pH of stock discharged from the chlorination washer prior to the addition of caustic. This was accomplished with the use of an American Heat Reclaiming Corporation spiral heat exchanger.

The design of this exchanger differs from that of conventional types in that two plates are rolled up to form concentric spirals. The media flow countercurrently in the two spaces between the plates. It has been proven that more turbulence is developed in flow of this type as compared to straight line flow, and as a consequence higher rates of heat transfers are obtained.

The exchanger employs #316 stainless steel at the points of contact with the high alkalinity liquor. This piece of equipment has been in operation for a period of three and one-half years without any difficulties which might arise from corrosion.

For metering stock into the fourth stage, a volume meter is used to discharge the pulp into a totally enclosed compartment where live steam is injected through four small orifices in series, whereby, the pulp temperature is increased a little as it flows by each point until it is discharged into the down pipe and enters the bottom of the tower at a temperature of 122° F.

Most of the control and operating devices and instruments are grouped together on a centrally located panel for the convenience of the bleach plant operator. The recording instruments are primarily liquid level, temperature, and flow recorders. All of the chemicals are added through rotometers which are conveniently located at this central point.

Three stages can be operated at a minimum rate of 60 to 70 tons per day to produce semi-bleached pulp in brightness ranges from 60 to 72 percent G. E. The fourth stage can be operated under these conditions to produce a full bleached pulp at 80 percent brightness. Under conditions of peak production at 200 ton input rate of unbleached, as much as 110 tons of semi-bleached are available at 67 percent brightness and 70 tons are available from the fourth stage at 79 to 80 percent brightness.

To the best of our knowledge, the average conversion loss through the plant is 10 percent. Upon occasion, due to difficulties with tower agitators, washers or screw conveyors, it has been found that with a minimum of piping changes in the basement, a complete stage in the operation could be by-passed to the extent that semi-bleached pulp can be produced in sufficient quantities to satisfy pressing requirements.

At times like this, it is necessary to make changes in chemical additions in order to facilitate the protection requirements for some of the materials of construction.

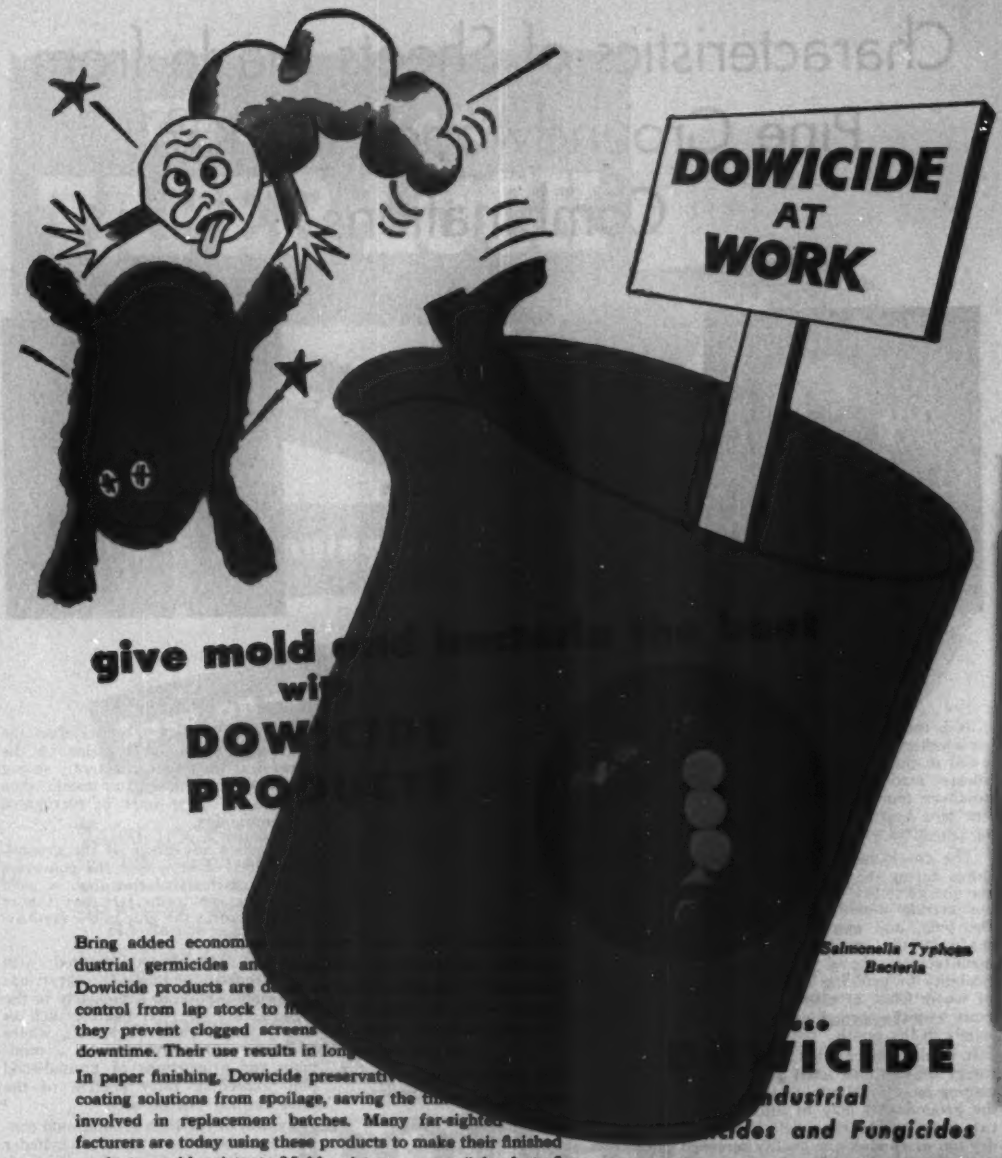
In the light of the above operating conditions, it is easy to see that quite a bit of versatility may be achieved in the operation of this plant to satisfy the rate and brightness requirements of bleached pulp.

WASTE LIQUOR RESEARCH

Research will be carried on for at least the next year at three leading agricultural colleges to find more effective large-scale uses for spent sulphite liquor, the Sulphite Pulp Manufacturers' Research League has announced. Purpose of each school's research is to reduce sulphite pollution in Wisconsin streams. At Michigan State, Minnesota, and Wisconsion, agricultural scientists are working on projects financed by the League.

The Universities of Wisconsin and Minnesota are investigating two topics which are the two halves of a single subject. The Wisconsin agricultural specialists are hot on the trail of how the vitamins and growth factors in torula yeast as used in fortified poultry feeds affects the development and weight of the birds. Minnesota poultry professors are working on a parallel problem, but are confining their research to the unidentified and unknown growth factors in this feed supplement.

At Michigan State College a League fellowship in the agricultural school is investigating the usefulness of torula yeast in feeding swine. This fellowship has already been operating for one year, and has just been renewed for another year.



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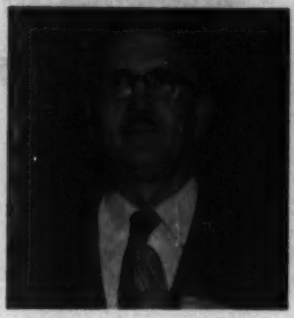
Characteristics of Sheets made from Pine Groundwood-Pine Kraft Combinations*

Jesse C. Bradbury

and

John L. McCollough



Administrative Assistant, Technical Service Dept., Southland Paper Mills Inc., and Board Mill Superintendent, Southland Paper Mills, Inc. respectively

It is thought that the manufacturers of southern kraft pulp might be interested in the general characteristics of sheets made with combinations of southern pine groundwood and southern pine kraft, either bleached or unbleached.

The development of grinding procedures during the past ten years proves the practicability of grinding the pine for certain desired characteristics in the pulp, and more recent advances made by the grinder and grindstone manufacturers have proven the practicability of grinding five foot lengths of wood. This, of course, would integrate with the normal kraft mill's wood supply in the South.

It is also evident that the manufacturers of southern kraft pulp are becoming more yield conscious; and here the groundwood may fit into the picture, since the average yield is one air-dry ton of number one quality screened stock for 0.9 of a 128 cubic foot cord of rough wood as received in the woodyard.

After making trial runs of five-vat cylinder machine board of kraft-groundwood pulp combinations it was determined that, through close cooperation between converter, customer and manufacturer, boards of varied desirable characteristics could be produced.

*Presented at the Joint Fall Meeting of the Southeastern and Southern Division of the American Pulp and Paper Mill Superintendents Assn., Jacksonville, Fla., October 10-12, 1951.

Southland Paper Mills, Inc., Lufkin, Texas, has, as a board production unit, a five-vat cylinder machine with an untrimmed sheet width of 112 inches, 70 4-ft. dryers, two calender stacks, sheet cutter, reel and winder.

As a basis for comparison, we have selected sheets of .015-52 lbs. per 1000 sq. ft. outside liner board consisting of 1-ply unbleached kraft and 4 plies 60 percent kraft and 40 percent groundwood, versus .015-60 lbs. per 1000 sq. ft. solid 5-ply kraft board. In general this sheet has the same characteristics and appearance as a fourdrinier sheet made from the kraft-groundwood mixture as the primary furnish and the solid kraft as the secondary headbox furnish. The results of tests in the following table will give an indication of strength and bulking characteristics.

	Kraft-Groundwood Combination	*Solid Kraft*
Caliper, inches	0.0147	0.0152
Lbs./M. sq. ft.	51.3	60.3
Mullen, pts.	107	141

These average tests on mill scale runs of approximately 200 tons each indicate that while the basis weight of the solid kraft sheet was 17.5 percent higher than that of the kraft-groundwood combination, the caliper of the heavier solid kraft increased but 3.5 percent. Therefore, an immediate advantage could be realized by the converter as regards increased yardage of board per ton of purchased product. The bursting strength of the solid kraft sheet was 32 percent higher than the kraft-groundwood combination, yet the lower test liner was sufficiently strong to surpass minimum requirements when used as an outer liner in corrugated box containers.

An added advantage of the groundwood filled sheet is that the converter can run it much faster than a solid kraft sheet due to the fact that it more readily absorbs the glue in the laminating machine.

Virgin groundwood blended with both bleached and unbleached kraft has been employed quite extensively in the manufacture of food boards, such as bakery trays, meat trays, etc., where strength requirements are at a minimum and proportions of groundwood pulp exceeding forty percent of the total furnish can be used.

Typical of the high groundwood content food board is a sheet of cylinder board composed of one-ply solid high bleached kraft and four-plies of fifty percent each of groundwood and low brightness kraft pulp. In general appearance, this sheet resembles bleached sulphate manila-back board. The normal manila-back board is used for food board packaging (such as butter, oleo and shortening) where greater strength is required. This sheet has been developed satisfactorily by using two plies solid bleached kraft and three plies ten percent groundwood and ninety percent low bleached kraft combined. This product has a G. E. brightness of 70

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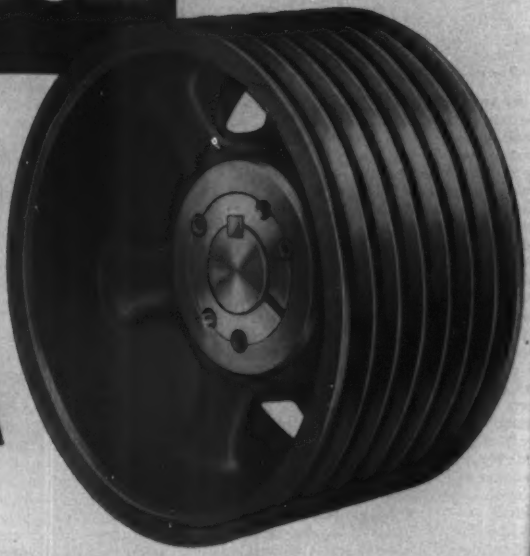

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on the high brightness or top side and a G. E. brightness of 58 on the low brightness side. The addition of ten percent groundwood in only sixty percent of the total furnish has little effect on the physical strength of the product.

The following table shows a comparison of high groundwood content food board versus low groundwood content food board.

FOOD BOARD

	High Groundwood Content	Low Groundwood Content
Caliper, inches	0.0153	0.0154
Lbs./M. sq. ft.	55.1	67.0
Mullen, pts.	113.0	154.0

As the groundwood tends to soften the sheet somewhat, the addition of small percentages of groundwood improves the scoring and bending quality of kraft base boards. Most converters are accustomed to handling the soft waste news filled sheets and will welcome a product that is not as hard as solid kraft. A decided advantage of using virgin groundwood rather than waste news is the customer appeal of the clean cream-white filler as in contrast to the gray backing of the latter.

Cylinder boards for numerous end uses can be improved by the addition of groundwood without materially affecting the physical strength. It has been pointed out that even a small amount of groundwood blended with kraft increases the bulk, that scoring and bending are definitely improved and that the color of groundwood pulp is appealing. Multiple ply boards containing mixtures of groundwood and kraft pulps in the inner layers, boards containing groundwood kraft combinations in all layers can be produced to the advantage of the manufacturer.

Southern board mills annually produce many thousands of tons of high test kraft board to be used in containers that do not utilize its inherent strength. Therefore, from a standard of economy and conservation the use of groundwood is indicated.

It should be pointed out that the term "virgin groundwood" as referred to in this discussion, implies that the groundwood pulp is manufactured from fresh wood in modern grinders, and that the quality of the resulting pulp is as closely supervised and controlled as in the cooking of kraft pulp. Groundwood pulp produced under favorable conditions will possess felting and draining properties suitable for forming smooth and even textured sheets of established physical characteristics. This pulp is in no way to be compared with refined saw dust, wood flour, or any such poor fiber manufactured from wood chips by mechanical means.

Possible cost advantages may be calculated on the basis that groundwood pulp should be expected to be about sixty percent of the cost of unbleached kraft pulp, or about forty percent of the cost of bleached kraft pulp in the stock preparation room of an integrated mill.

From long experience, the converters in printing have become accustomed to the conventional patent coated waste news filled sheet. In general, this sheet is very bulky and lacks density particularly in the filler stock. This general characteristic of resiliency has conditioned the art of paperboard printing to achieve optimum efficiency in the use of this type of board. In the past few years, more and more solid chemical pulp boards have been entering this field of conversion, and without exception, radical departures were made of necessity in the conventional printing techniques to handle these grades in the presses. The normal solution of this problem is usually achieved by radical increases in nip pressures on the plates. Kraft boards are so much stronger and denser that they will withstand nip pressures which would practically disintegrate patent coated and, yet, at these pressures the solid sheet responds and allows a good faithful reproduction.

More and more printing is being done on the liner board of corrugated boxes for the purpose of advertising. In the instance of high production fourdrinier paperboard operation, with the use of a secondary headbox, substitution of ten per cent groundwood in the primary stock furnish would supply sufficient resiliency to the sheet to greatly aid the printer in his operation. This practice should be followed only in the event that the ultimate in strength requirement was not too important.

In cylinder machine operation with multiple vats, it is easily possible to use a full bleached furnish on the top and bottom liners with groundwood fortified furnish in the center plies to produce a sheet of good external appearance. With sufficient groundwood of the proper quality in the middle of the sheet, extremes of bulking could be achieved to produce a sheet with exceptional stiffness and rigidity. This internal furnish would appreciably aid the printer by supplying resiliency or cushion at the nip of the press.

All of these items taken into account will carry considerable weight as the producer of kraft paperboard attempts to break into the older markets of the North. By manufacturing groundwood in conjunction with kraft pulp production, the producer still has the decided advantage of offering a virgin pulp product to the consumer.

BOLTON CONTEST WINNERS

The winners of the Fourth Bolton Award Contest, sponsored by John W. Bolton and Sons, Inc., Lawrence, Mass., have been announced by The American Pulp and Paper Mill Superintendents Assn.

The contest, conducted by the Superintendents association, was on the subject "Why Profit Is Everybody's Job." From the many entries received from all sections of the country and Canada, three manuscripts were selected by the judges for major awards, ten for divisional—one manuscript for each of the ten divisions of the association.

The three major award winners of the contest are: first prize, Frank Thompson, Champion Paper and Fibre Co., Hamilton, Ohio; second prize, William H. Chandler, S. D. Warren Co., Cumberland Mills, Maine; third prize, Bemis P. Wood, Strathmore Paper Co., West Springfield, Mass.

The winners of the divisional awards are: Connecticut Valley, Sidney A. Brown, Rogers Corp., Manchester, Conn.; Miami Valley, D. W. Newell, Philip Carey Mfg. Co., Cincinnati, Ohio; Michigan, William F. Hathaway, Kalamazoo, Vegetable Parchment Co., Kalamazoo, Mich.; New York-Canadian, S. H. Andrian, A. P. W. Products Co., Albany, N. Y.; Northeastern, O. E. Anderson, International Paper Co., Chisholm, Maine; Northwestern, Bruce J. Boerner, Cornell Wood Products, Milwaukee, Wis.; Pacific Coast, W. C. Gigler, Crown Zellerbach Corp., Camas, Wash.; Pennsylvania-New Jersey-Delaware, G. S. Brickett, Congoleum-Nairn, Inc., Cedarhurst, Md.; Southeastern, Robert H. Aronow, West Virginia Pulp and Paper Co., Charleston, S. C.; and Southern, J. H. Groves, Union Bag & Paper Corp., Savannah, Ga.

INTERNATIONAL RAISES WAGES

TICONDEROGA, N. Y. — The 4,500 workers of the Northern Division of the International Paper Co., which includes the Ticonderoga plant, have been granted a wage increase of three cents an hour instead of four by the Wage Stabilization Board. The increase in pay is retroactive to June 1 of this year.

The base pay for men in the local mills is now $1.30 per hour and $1.22 for women employes.

At a conference in May between International Paper Co. officials and unions, including the International Brotherhood of Paper Makers, the International Brotherhood of Pulp, Sulphite and Paper Mill Workers and the International Brotherhood of Firemen and Oilers, an agreement was reached to raise the hourly wage scale in the Northern Division four cents, subject to the approval of the Wage Stabilization Board.

Mills included in the new contract, in addition to Ticonderoga, are Palmer, Niagara Falls, North Tonawanda, Livermore Falls, Me.; and York Haven, Pa. The contract expires June 1, 1952.

CANADIAN CAR LOADINGS

OTTAWA—Car loadings on the railways from the beginning of this year until October 13 advanced to 195,496 cars of woodpulp and paper as compared with 176,848 cars in the corresponding period of 1950, according to the latest nationwide survey by the Canadian Government.

TEN TO FOURTEEN

Perkins ten-roll 64" face Web Supercalender with provision for fourteen (14) rolls.

- All rolls in Timken anti-friction bearings
- Stationary reel with electric hoist
- Lever pressure with pneumatic loading
- Fly rolls mounted in self-aligning anti-friction bearings
- Motor driven hoist for raising and lowering rolls

B. F. PERKINS & SON, Inc.

HOLYOKE, MASS., U.S.A.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

MAINTENANCE—XIV OF SERIES

More Service From Power Trucks

J. A. Draxler

Service Manager, Elwell-Parker Electric Co.

Preventive maintenance of power industrial trucks is a good policy any time; in a national emergency it is especially important, for these reasons:

1—More service must be obtained from them as more manpower flows to armed forces and tremendous tonnages of materials must be handled in the shortest possible time. It becomes a patriotic duty to keep machines in working order both for the defense effort and to supply basic needs at home.

2—Proper maintenance is the most economical way to obtain maximum results from trucks for the longest period of time. A well-built truck in good working condition will last 10 to 20 years; in the meantime it can be depended upon for work, day in, day out. Abused by excessive overloading, lack of lubrication and inattention to needed adjustments and repairs it can be put out of commission in a few months.

3—As steel and other critical metals become scarcer truck parts are hard to obtain and more expensive. Besides steel, considerable amounts of copper, lead and zinc are used in truck construction. Under war-time conditions it has been a problem for users to obtain parts or new trucks without government allocation. That happened in World War II and it can happen again.

One good man with a truck can handle as much material as five to ten men working only with hand-operated equipment. But if the truck is in the repair shop waiting for parts the situation is somewhat like losing the services of that number of men.

Leading builders of power trucks publish maintenance manuals. Some person or persons capable of understanding a manual and applying the information it contains should be assigned to this responsibility. The services of truck builders' field engineers also are available for consultation or advice. This service generally is offered free of charge to users of their trucks, and it should be used more often than at present. Truck builders that take pride in their products make every effort to help users to keep maintenance cases at a minimum.

In well-managed industrial establishments production itself depends on material handling by means of trucks, hence maintenance is given the attention it deserves. Low truck-operating costs and long service records result from simple routine, but still more important is the fact that this reduces total cost of handling materials and has a bearing on overall profit or loss.

Summarizing some of the essential requirements for good truck maintenance:

1—A good driver, one who is physically fitted for the job, who can be instructed and thereafter be depended on to follow instructions. A truck is an expensive machine and should not be

Low-lift platform truck transporting heavy loads of flat stock on skids. A special advantage of this type of truck is its light weight compared to capacity load weight—more "pay load" per "truck weight." Some special types of low-lift platforms for these basic trucks have been developed for use in paper mills.

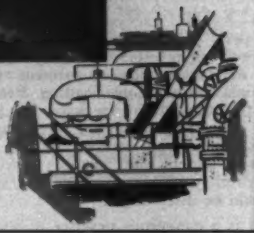
Loading and unloading freight cars is an easy operation with power trucks such as this, due to their compactness, large capacity for their size, and maneuverability. Speed and low operating costs, general adaptability, also are features. The present situation in the national preparedness program emphasizes the value of this equipment and the advisability of preventive maintenance.

From interpretation to installation . . .

GRINNELL PREFABRICATED PIPING

assures greater customer satisfaction through its five-point program of

Quality Control



The bending operation illustrated above is an example of Grinnell QUALITY CONTROL *in action . . .*

The tubing shown is made from a chromium alloy steel forging, turned and bored. Outside diameter is 14¾ inches; wall thickness 2⅜ inches. Temperatures of the tubing within the bending furnace were maintained and controlled within 20°F of specified temperatures. Bending was done with such skill and rapidity as to permit a temperature drop of only 100°F at the inside surface of the tubing. Maximum thinning was only .06 inch.

Designed for a central station power plant to accommodate 1500 PSI and 1050°F, this is typical of Grinnell's engineering knowledge which assures prefabricated piping of the right kind — for all types of installations no matter how complex.

QUALITY CONTROL is the result of Grinnell's 100 years of practical experience in the field of piping. Delivery of prefabricated piping subassemblies to exacting engineering requirements which meet all governing code requirements is assured by Grinnell Quality Control, which includes:

- Interpretative engineering
- Metallurgical research
- Specialized facilities
- Skilled personnel
- Rigid inspection

ECONOMY of specifying Grinnell prefabricating piping results from:

- One source for design, interpretation and fabrication
- Coordination of shop production under ideal conditions
- Elimination of waste by paying only for finished material delivered
- Reduction in field erection time

Write for the booklet, Grinnell Prefabricated Piping.

GRINNELL

WHENEVER PIPING IS INVOLVED

GRINNELL COMPANY, INC., Providence, R. I. Warehouses: Atlanta • Billings • Buffalo • Charlotte • Chicago Cleveland • Cranston • Fresno • Kansas City • Houston • Long Beach • Los Angeles • Milwaukee • Minneapolis • New York Oakland • Philadelphia • Pocatello • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane

entrusted to an incompetent or careless driver. "Cowboy" operators are expensive; they can do a lot of damage. Some firms will not permit a new or inexperienced hand to try to operate a truck, simple though the work may seem to be. They require applicants for such jobs to "go to school" for individual or class instructions for a training period. In this way they can pick the men who are likely to become competent drivers. Others select such men from among their employes in recognition of good judgment and conscientious work. In World War II many women proved they could drive trucks acceptably well; the right kind are attentive to their work.

2—Floors, aisles, ramps—all surface areas where the truck operates—should be in good condition. Holes and ruts in brick and concrete, where the truck continually passes, subject the machine to severe strain and vibration. Sharp edges cut and wear out tires twice as fast as if they were operated on smooth, clean floors. Flat spots on tires mean flat wheels, they can damage the machine and cause injury to the driver. Plant maintenance obviously has an important bearing on truck maintenance. Safety for operator, personnel, equipment and materials is related to this need for reasonably good surfaces on which to work.

3—Avoid excessive overloading. Properly designed and well built trucks have a high reserve capacity as well as safety devices to protect them against too much overloading. Because of this they often are used for loads far beyond their normal rated capacities. This puts stresses on the machines which they cannot withstand indefinitely. Therefore this practice should be discouraged.

It is a dangerous practice to operate some types of trucks beyond their normal capacities. Many types of breakdowns may result. Headframes of high-lift trucks may be twisted and rebuilding them becomes an expensive factory job. The user is fortunate if the damage is confined to the truck and not transmitted to material, other equipment and workmen.

4—Lubrication at regular intervals in accordance with truck builders' manuals and charts should not be neglected. It is one of the easiest and least expensive methods of prolonging truck life and preventing unnecessary damage and breakdowns. It is important to lubricate strictly in accordance with instructions for over-lubrication may result in dropping of lubricants on runways and damage to products handled.

5—Periodic check-ups should be in charge of a competent mechanic or department. Inspections should be made weekly, monthly and bi-annually, progressively going deeper into the vital parts of the machine. Parts that need replacement can be detected in time so that new ones may be ordered, otherwise failure of a part may put the truck out of commission a long time. Essential spare parts should always be kept in stock for use when needed.

Many users have systems of maintenance checks. Typed forms showing when and what items are to receive attention provide a convenient record indicating the condition of the truck. They may be useful later on to show which truck is giving the best service at least cost.

Efficient maintenance depends to a considerable extent on teamwork between truck operator and maintenance mechanic. If the machine always is operated by the same driver he soon understands it and can advise the mechanic of any difficulties with it. If anything goes wrong while the truck is out on the job the operator should not attempt to fix it unless he himself is a qualified mechanic. Tinkering can cause trouble. It is much better to have the truck taken to the maintenance department or have a mechanic sent to the truck to make adjustments or repairs.

When trucks are operated in shifts and by different drivers the best system is for a driver at the end of a shift to report on record tags any adjustments that he considers to be necessary. The driver at the beginning of a shift should never take out a truck before putting it through simple tests to know if it is in good working order. These precautions avoid delays and controversy over responsibility; also, it saves valuable time in making adjustments and repairs.

Each of the three types of power in power trucks—electric-battery, gas-electric and "straight gas" as it is known in the industry—has certain advantages. The electric storage battery has no moving parts, therefore it is the most reliable and least costly source of power. Today's high-grade motors are practically foolproof; they are sealed in, self-lubricating and fireproof. It is almost impossible to damage them by overloading; they frequently outlast the trucks. In the gas-electric type a gasoline motor is used to generate the current to operate electric motors, to gain advantages inherent in this form of control. The "straight gas" type uses only a gasoline engine for power. Expert opinion backed by service records is that in the long run the electric-battery type requires the least servicing and is the most economical. Whichever type is used it should be adequate for the work the truck is intended to perform and given the servicing the builders recommend.

Finally, no amount of expert mechanical attention will make a poor truck operate as safely and efficiently and last as long as a good one, but neglect can readily change a good truck into a poorly operating one.

DISCUSS MILITARY PACKAGING

Two hundred ten members and guests of Chicago TAPPI turned out to hear C. K. Royce, Head of the Packaging Section, Office of Navy Material, discuss military packaging. This was the regular October dinner meeting of the section, held on the 15th at the Chicago Bar Assn.

Chairman Vallandigham introduced Chet Spaulding who was largely responsible for the arrangements of the evening's program. Mr. Spaulding in turn introduced Mr. Royce, who first presented the film, "Pack It Right."

The film was a collection of scenes from World War II, principally the Pacific area. The picture showed badly damaged packages piled high in advance supply depots. Damage shown was from handling, corrosion, mold, rusting of metal containers. Through the joint efforts of military packaging personnel and the packaging industry, the picture portrayed, steps were taken to improve packaging, and by the war end a much higher percentage of packaged units were getting to the fighting areas in usable condition.

PACIFIC DIV. MEETING

The Pacific Coast Division of The American Pulp and Paper Mill Superintendents Assn. is to hold its 1951 Fall meeting on November 30, 1951, at the New Washington Hotel, Seattle, Wash. One-half day is to be given to mill visits; one-half day to a technical program. The meeting is to include a men's luncheon, a banquet and dance.

L. R. Hartman, Weyerhaeuser Timber Co., Longview, Wash., is chairman of the division.

GETS MANAGEMENT AWARD

Marathon Corp., New York, will be awarded a Certificate of Management Excellence for the year 1951, according to the American Institute of Management, which annually confers such awards to those corporations which pass its tests, based on an analysis of such factors as economic function, corporate structure, health of earnings growth, fiscal policies, directorate analysis, executive evaluations, etc. In a recent management audit of the company by the Institute, Marathon received an analysis rating of 8,250 points out of a possible 10,000.

This will be the second time that Marathon will be designated "excellently managed" by the Institute.

NEW SULPHUR PLANT

MONTREAL, Que. — Consolidated Paper Corp. has started construction at Grand-Mere, Que., of a $500,000 plant capable of producing from 4,000 to 5,000 tons of elemental sulphur per year from Quebec pyrite ores.

George M. Hobart, president, says the plant is scheduled to be completed next summer.

SULPHUR

*Interesting Facts Concerning This Basic Raw Material from the Gulf Coast Region

*MAN MADE MOUNTAINS

Sulphur from the field collecting stations is delivered to the vats through insulated pipe lines which discharge directly on the vats. The sulphur is pumped at such a rate that the height of the vat is increased only a few inches per day, the slight vertical rise being the result of a large horizontal area which provides maximum cooling surface and ample tonnage capacity. As the sulphur solidifies it gradually builds up into a great block or vat of solid sulphur, which may be as large as 1200 feet long, 50 feet high, and 200 feet wide, and containing as much as half a million tons of sulphur.

The discharge lines are placed so that the liquid sulphur is spread in an even layer over the entire surface of the vat and is permitted to solidify uniformly. If the liquid sulphur is introduced too rapidly or is not properly distributed, pockets of liquid sulphur will be covered by a crust and remain in the solid sulphur. The low heat-conductivity of sulphur might keep such pockets liquid for a year or more.

Loading operations at our Newgulf, Texas' mine

TEXAS GULF SULPHUR CO.
INC.

75 East 45th St. New York 17, N. Y.

Mines: Newgulf and Moss Bluff, Texas

New Equipment

Tensile Tester Accessories

Several new accessories have been added to the Instron Tensile Tester which are designed to increase its versatility. Outstanding development is the addition of compressional accessories. An auxiliary and easily removable crosshead, as illustrated, is attached to the frame below the moving crosshead. The sample is compressed between a rigidly-attached load sensitive table and the moving crosshead.

The same flexibility of control for operating the motion of the crosshead in tensile measurements is now possible for compression testing. Load deformation, cyclic, and relaxation data, can be obtained with the same accuracy and high speed response it is said. By the use of simple jigs and fixtures, torsional and flexural measurements may be carried out to evaluate more completely the mechanical properties of the test specimen. The full scale range of compression tests available, with three interchangeable load cells, extends from 20 grams to 5000 pounds.

Also developed as accessory equipment is an integrator which make the area under the load deformation curve equivalent to the energy either absorbed or returned by the test sample; and is immediately available from counter readings.

Write to Instron Engineering Corp., 2 Hancock St., Quincy 71, Mass.

Vane Type Rotary Pump

A heavy duty, vane type rotary pump has been added to an existing line of rotary pumps.

All models are positive displacement, sliding-vane type in which the pressure of the liquid being pumped maintains contact of the vanes against the liner.

The pumps are to be produced in both internal and external bearing design, the external bearing models being especially suited for non-lubricating liquids such as gasoline and kerosene. Come with built-in relief valve, and can be manufactured in either standard fitted, bronze fitted or in all bronze construction. Manufactured by Worthington Pump and Machinery Corp., Harrison, N. J.

Bi-Act Controller

A new, non-indicating, force-balance controller with only one-knob adjustment for two control responses has been introduced as another component part of the Taylor three-part Transet Control System.

Known as the Transet Bi-Act Controller, the unit is designed for applications where it is desirable to transmit the measured variable to some remote location. It is particularly adaptable to flow, liquid level or pressure applications requiring fast reset rates and broad throttling bands, or applications where derivative action is not essential.

The new controller features: (1) a new and simplified control circuit; (2) one knob to adjust both proportional and automatic reset responses; (3) controller action can be changed quickly and easily without disturbing any piping connections; (4) an optional, plug-in type, leakless manifold to provide a simple means for connecting or removing controller; (5) rapid controller action is obtained by a large capacity booster air relay; (6) built-in cut-off relay is provided so that they may be either panel or field mounted; (7) an inexpensive controller for those applications where derivative response is not required; (8) has a range of

adjustment of 1 to 200 percent throttling range and automatic reset of 0 to 100 repeats per minute. Available with or without the manifold bracket. Write for Bulletin 98070, Taylor Instrument Companies, Rochester 1, N.Y.

Soil-Resistivity Meter

Model 243-A vibroground is a new, direct-reading meter for measurement of soil resistivities from 0 to 30,000 ohms per cubic centimeter.

Highlighted features are: (1) Lever-action "Adjust-Read" switch is placed for thumb operation, either with instrument carried by sling strap or harness; (2) meter glass is shatterproof; (3) meter scale is baked enamel on metal to prevent curling or buckling under extremes of heat and humidity; (4) polarized microphone-type probe connector designed to eliminate binding posts.

Power is provided by 8 standard No. 2 flashlight batteries, which can be

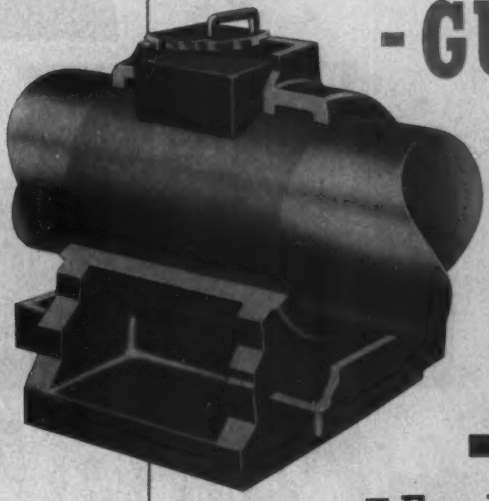
(Continued on page 35)

Belt Training Carrier

On most applications the belt training carriers need only be installed at intervals of 50-100 feet. The "training rollers" respond instantaneously to any shift of the belt off dead-center, and tilt the carrier into an angular position with respect to the direction of belt travel. This action quickly returns the belt to center and the carrier resumes its normal position. Edge wear of the belt is described as negligible with this carrier. Its use is designed to insure against any possibility of serious belt damage due to improper training.

Write for Bulletin 2-C to Stephens-Adamson Mfg. Co., Aurora, Ill.

For better lubrication of grease-lubricated dryer roll bearings



-GULF BLOCK GREASE

- Constant melting rate
- Nonglazing
- Effective up to 285°F.
- Excellent oiliness characteristics
- Clean

IF YOUR PAPER MACHINE is equipped with grease-lubricated dryer roll bearings, you'll want to get the benefits of these advantages of Gulf Block Grease.

Gulf Block Grease melts at a constant rate—provides a continuous film of lubricant. And it is nonglazing—retains its characteristic porous surface. This means the need for supplemental oiling is reduced and you avoid starved bearings.

Gulf Block Grease provides effective protection under a wide range of operating conditions. It is ideal for journal temperatures up to 285°F. and has excellent oiliness characteristics which reduce starting torque, frictional resistance, and wear. As a result, power and maintenance costs are unusually low for this type of lubricant.

Another advantage of Gulf Block Grease is cleanliness—it does not carburize at high operating temperatures.

These are the reasons why users report less grease consumption, fewer bearing replacements, and lower maintenance costs after switching to the new improved Gulf Block Grease.

Call in a Gulf Lubrication Engineer today and ask him to give you further details on this quality block grease. Perhaps he can help you get better lubrication of your grease-lubricated dryer roll bearings. Write, wire, or phone your nearest Gulf office today.

Gulf Oil Corporation · Gulf Refining Company
Gulf Building, Pittsburgh 30, Pennsylvania

FIFTY YEARS OF SERVICE
1901 GULF 1951
PETROLEUM AND ITS PRODUCTS

Figure 1—Research and Machine Design Committee. Figure 2—Hydraulics Committee. Figure 3—Chemical Engineering Committee. Figure 4—Mill Maintenance and Materials Committee. Figure 5—Steam and Power Committee. Figure 6—Materials Handling Committee.

TAPPI Engineers Meet

The 6th TAPPI Engineering Conference opened October 15 at the General Oglethorpe Hotel, Savannah, Ga., with some 700 in attendance. The technical sessions covered the many phases of pulp and paper mill from power generation problems to engineering research. Abstracts of papers presented were published in *Paper Trade Journal* October 19.

A major organizational change occurred in the resignations of George Pringle as chairman and J. W. Hemphill as secretary of the Engineering Division of the Technical Assn. of the Pulp and Paper Industry. President Kenneth Geohegan paid tribute to the outstanding service of these men. Their successors will be Charles J. Sibler of West Virginia Pulp and Paper Co., as chairman, and W. C. Bloomquist, General Electric Co., as secretary.

The closing day was devoted to visits to the Union Bag & Paper Corp. plant in the morning, a barbeque, at the Mary Calder Golf Course and in the afternoon a trip through the Port Wentworth operation of Southern Paperboard Corp.

The Union Bag visit gave the engineers an opportunity to observe the results of continuous expansion on a gigantic scale. The present program will raise the current daily production from 1350 tons to 1750 tons by August

1953. This will require the installation of a sixth machine 236 inches wide with a speed of 2000 feet per minute, the present machines will be stepped up to 1600 feet. The No. 2 machine will be switched from kraft to semi-chemical hardwood nine point.

The changes in pulp capacity to meet the paper machine requirements include: a new turbine to bring the latest 1250 lbs. pressure boiler up to capacity. This will give this plant the largest high pressure boiler installation in the paper industry. The whole installation can burn either coal or oil. Only 45 percent of fuel is purchased, as black liquor supplies 40 percent and bark 15 percent of the total requirements.

An older smaller lime kiln is being replaced by a large 10½ feet diameter Allis-Chalmers unit, a 350 ton Combustion Engineering-Superheater, Inc., recovery unit, a Goslin Birmingham septuplecate evaporator and eight new digesters will be installed in the kraft mill together with auxiliary equipment.

The new semi-chemical pulp mill to supply No. 2 machine includes sulphur burners, liquor making facilities, six digesters, nine Sprout Waldron refiners, two Swenson four-stage 9x16 foot washers, two Impco 8x16 deckers and Impco screens. It is estimated that 85 cubic feet of gum wood will produce one ton of semi-chemical pulp.

With the new increases in pulp capacity, extensive changes are necessary in the wood yard. Additional wood handling conveyors and a flumeing system will be installed, making possible the handling of both pine and hardwoods. The present facilities now prepare 800,000 cords per year. When completed the yards will be able to handle one million cords per year.

Union Bag presently owns or controls 750,000 acres of timberland within 100 miles of Savannah. Thus the hardwood operation will add balance to the active forest management plans practiced by the company.

Upon completion of current expansion, consideration is being given to further increases to add 150 tons more of kraft paper and board and 100 tons additional of semi-chemical nine point bringing the total capacity to 2000 tons per day.

At the conclusion of the meeting the enthusiasm and the foot weariness of those attending attested to the success of J. R. Lientz and his committee and the gracious hospitality of Union Bag and Southern Paperboard for a successful meeting.

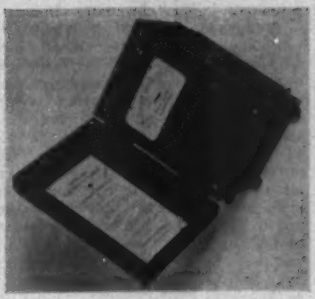
NEW EQUIPMENT

Self-Resistive Meter

(Continued from page 32)

quickly replaced without tools. Probe has large, comfortable handle, and replaceable, screw-in tip. One extra tip is carried in lid of meter. Weight (with batteries) is 9 lbs., and overall size is 9" x 6" x 6½".

Complete details are available on request to Associated Research, Inc., 3758 W. Belmont Ave., Chicago 18, Ill.



NEW MATERIALS

Rust Inhibitive Primer

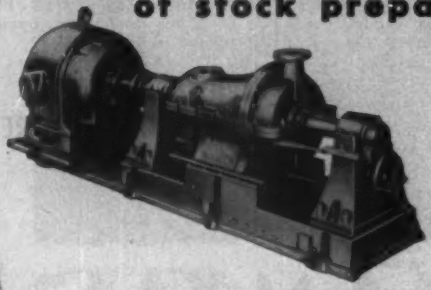
Prufcoat Heavy-Duty Primer P-50 is amounced as rust inhibitive metal primer that can be used with either conventional paint or active-solvent top coats. It is designed to be effective on severely corroded metal surfaces common to process plants. Serves the purpose of zinc chromate and red-lead types of primers but requires only overnight drying prior to the application of active-solvent finish coats, the manufacturer claims. The primer is composed of a heavy-bodied oil-modified synthetic resin vehicle carrying a high percentage of inhibitive pigments,

Jones

Still

"the MIGHTY MITE"

of stock preparation



In mill after mill, the Jones High-Speed Refiner is being used as a highly versatile general utility unit . . . refining stock for high-quality ledger paper; defibering over-issue news; clearing flakes from coated book broke.

And in case after case, the report comes back: "improved stock — better control — drastic reduction in operating horsepower requirements—lowered maintenance costs."

This explains why over 900 units have been sold (not counting those by imitators!) since its introduction. Your Jones representative will tell you more about it — or write for Bulletin 1011-B.

Jones

HIGH-SPEED REFINER

E. D. Jones and Sons Company, Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

"Rigortex Enamel in good condition after five years in concrete chests"

—reported by a maintenance engineer of a large mill in the Northwest. A tough paint, Rigortex cuts painting costs—stands up to the strongest chemical conditions in a pulp or paper mill. Withstands:

acids of pH 5 from pulp in machine chests

chlorine fumes on wooden hoods over bleaching tanks

submersion in filters

abrasion on counter current agitators

condensation on walls and ceilings, and water spilled on floors

aggressive chemicals in bleach pulp slurry in concrete chests

and numerous other conditions and surfaces such as bleach pipe, conveyor pipe, spiral shaft, washers, digesters.

Rigortex comes in white and a number of colors. Apply Rigortex like any paint, by brush or spray gun. Used by Brown Co., Kimberly Clark, Rayonier, Fiberboard and others.

Maintenance men, purchasing agents: ask for folder "Chemical-resistant Enamels" FREE

Inertol Co., Inc.

480 Frelinghuysen Ave.

Newark 5, N. J.

27 South Park

San Francisco 7, Calif.

principally zinc chromate. Being a heavy-bodied material, it deposits a relatively heavy primer film which tends to level out rough surfaces and to provide the needed extra protection at sharp edge, rivets, projections and other vulnerable points. Coverage on smooth metal is said to average 400 sq. ft. per gallon. Developed for use on either ferrous or non-ferrous metals, it is said to be highly effective on iron, steel, aluminum and magnesium, and to exhibit good adhesion to brass, copper, lead and monel metal. Manufactured by Prufcoat Laboratories, Inc., 50 East 42nd St., New York 17, N. Y.

Acrylic Copolymer Emulsions

Polyco 434 and Polyco 435 are new stable copolymer dispersions of higher acrylic esters for adhesives, binders and saturants. When dry, both these products or formulations thereof yield flexible, water-clear, non-oxidizable films with moderate to considerable tack and excellent ageing characteristics.

These emulsions contain no added plasticizers and thus are free of the disadvantages of embrittlement and variable film properties due to plasticizer migration or volatilization, it is stated. Continuous films can be formed at room temperature. Film properties are enhanced by drying or heat treating at 60-80°C.

Write American Polymer Corp., Peabody, Mass., for data sheet P-28.

NEW LITERATURE

Alloy Rods Co., York, Pa. Bulletin AR51-1, "Alloy Welding Electrodes for Defense Production." Discusses history of many electrodes as well as their properties and uses.

American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y. Brochure, "The Rudiments of Paper Sizing," by Ralph W. Kumler. Reprint No. 25. Lecture presented to the students of Pulp and Paper Manufacture at the University of Maine. Presents known facts and the possible scientific principles underlying the process.

Chemonomics, Inc., 400 Madison Ave., New York 17, N. Y. Book, "Patents for Technical Personnel," by Dr. Worth Wade. A handbook of patents, their development and practice in layman's language. 44 pp. Price $3.

Crawford, Inc., Engineering, 254 Aborn St., Providence 3, R. I. Bulletin, "New 'Drawlock' Type Cylinder for Rubber Plates." Sales copy.

General American-Evans Co., 135 S. LaSalle St., Chicago 90, Ill. Bulletin, "How to Make the Most of Your GAEX Cars." Illustrated talk for railroads and shippers. Also, book, "Operations Manual." Describes and illustrates procedures for loading and unloading various commodities.

Howe Scale Co., Rutland, Vt. Bulletin 508-B, "Move Materials Faster, Easier with Howe Trucks." Specifications and illustrations showing two- and four-wheel Hand Trucks, Trailer Trucks, Baggage Wagons, Platform Skids, etc.

Henry A. Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md. Leaflet, "Thickness Measurement," by Maynard R. Euverard, Interchemical Corp. Reprint from *The National Lithographer.*

Philadelphia Quartz Co., Public Ledger Bldg., Independence Sq., Philadelphia 6, Pa. Bulletin, "Silicate P's & Q's," Vol 31, No. 10. A message to those who use silicates of soda.

Frank G. Hough Co., Libertyville, Ill. Booklet, "Industrial Handling." Features: Box System; New Standards of Efficiency at Timken Steel Mill; Payloader School Pays at Naco Fertilizer; Going up to Lower Costs at National Distillers, etc.

Magnuson Products Corp., 50 Court St., Brooklyn 2, N. Y. Bulletin, "Permag Cleaning Compounds for Paper Mills." Directions on the application and uses of cleaning compounds by the paper industry.

Minneapolis-Honeywell Regulator Co., Station 40, Wayne and Windrim Aves., Philadelphia 44, Pa. Bulletin B15-12, "Characteristics of the Brown Electronik Continuous Balance System." Balancing Motors; Adaptability Considerations; Stray Electric Currents, etc. Also, Bulletin B15-13, "Characteristics of Measuring Circuits Used in Brown Electronik Potentiometers." The second of a series, Catalog 15-16, "pH and Conductivity Recorders and Controllers." Includes fundamental operating principles, descriptions of measuring systems, and details of components, as well as numerous typical applications. Catalog 100-4, "Pyrometer Supplies." Buyers guide and technical data. Catalog 200-1, "Brown Thermocouple Wells." Provides technical information concerning the selection of the proper well for any given application. Bulletin 1051, "Indicating Pyrometers and Resistance Thermometers." Describes a new line of non-control instruments.

National Assn. of Waste Material Dealers, Inc., 271 Madison Ave., New York 16, N. Y. "A Code of Trade Practices and Standards for the Garnetting Industry," adopted by the Textile Fibres Processors Institute. Become effective November 1, 1951. Available to all interested.

Octogan Process, Inc., 15 Bank St., Staten Island 1, N. Y. Booklet, "Anchorite 100." Describes a paint-anchoring corrosion-resistant phosphate treatment for metals.

Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. "Technical Reports Newsletter." Reviews a bibliography of the German chemical, metallurgical and process industries in postwar Germany which contains over 2000 document references with descriptive titles or abstracts including a 6000-entry subject index.

Remington Rand, Inc., Controls Division, 315 Fourth Ave., New York 10, N. Y. Pamphlet SN 774, "Aid to Management." Details activated inventory controls systems.

Stephens-Adamson Mfg. Co., Aurora, Ill. Booklet, Vol. 198, "The SA Conveyor." Features chip handling with Redlets at Cornell Paperboard Products Co., and other progress in materials handling. Also, Bulletin 2-c, "SA Belt Conveyor Carriers." Technical plus sales copy.

FINANCIAL

National Container Corp. declared the regular quarterly dividend of 25 cents per share on its Common Stock, payable December 10, 1951 to stockholders of record on November 20, 1951.

An initial dividend of 26.04 cents on the corporation's new $1.25 Convertible Preferred Stock, $25 par value, covering the period from September 25 (date of issuance of the preferred) to December 10, 1951, date of payment for the dividend, has also been declared. Preferred stockholders of record on November 20, 1951 will receive the dividend.

Great Lakes Paper Co., Ltd., has declared a dividend of 40 cents and 50 cents extra on common stock, and another dividend of 62½ cents on Class A preferred stock, payable December 31 to stockholders of record December 12. Previous payment was 25 cents on September 29, following 3-for-1 split and on June 30, it paid 75 cents on the old common stock.

Robert Gair Co., Inc., and its wholly owned domestic subsidiaries, combined with its 60 percent equity in the consolidated net income of Southern Paperboard Corp. and its subsidiary and with the consolidated net income of Gair Co. Canada Ltd. and its wholly owned subsidiaries, report consolidated net income for quarter ended September 30, 1951, amounted, after deducting provision of $1,855,000 for U. S. Federal income taxes and after preferred dividends, to $1,405,586, or $.79 per share on 1,779,888 shares of common stock.

The combined net income for the first nine months of 1951, after deducting provision of $7,380,000 for U. S. Federal income taxes and after preferred dividends, amounted to $5,014,801, or $2.82 per share on 1,779,888 shares of common stock. For the same period in 1950, the combined net income, after deducting provision of $1,685,000 for U.S. Federal income taxes, and after preferred dividends, was $3,735,916 or $2.10 per share on 1,779,888 shares of common stock. Federal taxes on income for the quarter ended September 30, 1951, and the nine months ended September 30, 1951, have been computed in accordance with the provisions of the Revenue Act of 1951 enacted October 20, 1951.

Net sales of Robert Gair Co., Inc., and its wholly owned subsidiaries for the first nine months of this year amounted to $60,694,420 compared to $39,094,994 for the same period in 1950.

Provision had been made during the year 1951 for the retirement of over $2 million in subsidiary company securities, including $650,000 of Gair Bogota Corp. 6 percent preferred and the entire outstanding funded debt of Fibre Board Container Corp., totaling $468,000.

A quarterly dividend of twenty-five cents per share for the fourth quarter of the year 1951, and an extra dividend of twenty cents were declared on the common stock of the company, payable December 10, 1951, to stockholders of record at the close of business on November 19, 1951, without the closing of the transfer books, making the total dividend declared for the year to date one dollar per share.

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CORES
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Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

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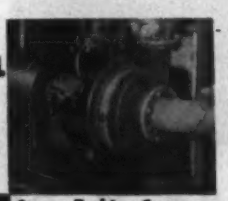
DE LAVAL Steam Turbine Company
TRENTON 2, NEW JERSEY

THE RUST ENGINEERING COMPANY
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Pittsburgh, Pennsylvania
Complete Service for
PULP AND PAPER MILLS—PLANTS AND FACILITIES
DESIGN, CONSTRUCTION, MODERNIZATION

APPLETON Felts
FOR UNIFORMITY

APPLETON WOOLEN MILLS
APPLETON WISCONSIN

Seaboard Container Corp. has issued a call for the redemption of the company's 5½ percent cumulative convertible preferred stock. Redemption is effective November 30, 1951, at a total of $21.10 a share, which is the call price plus accrued dividend. Shareholders are requested to send their stock certificates to the First National Bank of Jersey City, Jersey City, N.J., by November 30. Stockholders have the right to convert their cumulative convertible preferred shares into three shares of Class A common stock for each preferred share held at any time up to the close of business on November 20, 1951. If the shares are not converted or redeemed by November 30, all dividends on the preferred shares will cease to accrue and all rights will cease, except the right to receive the redemption price without interest.

Scott Paper Co. declared the regular quarterly dividends payable February 1, 1952, on the company's $3.40 cumulative preferred shares and $4 cumulative preferred shares to stockholders of record January 18, 1952. Since the agreement for the merger of Soundview Pulp Co. into Scott Paper Co. prevents the declaration of a dividend on common shares by either company prior to the merger, or November 22, 1951, whichever is earlier, no dividend was declared on Scott's common shares at this time.

It is anticipated that the merger may become effective on or about November 7, 1951, and that the dividend payable in December on the company's common shares would be declared promptly after the merger and in any event not later than November 22, 1951.

If the merger becomes effective prior to November 22, 1951, the dividend payable on the company's common shares in December will be at the rate of sixty cents per common share.

The dividend declared on the $3.40 cumulative preferred shares was 85 cents per share and the dividend declared on the $4 cumulative preferred shares was $1 per share.

The company reports net sales for the nine months ended September 29, 1951, of $91,891,078, which compare with net sales of $70,793,078 for the nine months ended September 30, 1950. Income before taxes in the latest nine-month period was $12,721,530, as against $10,177,451 a year earlier.

After provision for income taxes, net income for the 1951 period was $4,958,837, equal after preferred dividend requirements, to $2.62 per share of common stock outstanding. Net income for the first nine months of 1950 amounting to $5,746,293 was equal to $3.12 per common share after preferred dividends. The per share earnings on the common in the 1950 nine months would have been equivalent to $2.70, if the final tax rates for 1950 were applied to the first nine months.

Provision for taxes for the first nine months of the current calendar year was $7,762,693 (based on tax rates in effect at the close of the period), and compares with $4,431,158 for the like nine months of 1950.

SUPPLIERS

DOW CHEMICAL CO. has added John C. Young to its Cleveland office as a coatings salesman for the area.

COLUMBIA-SOUTHERN CHEMICAL CORP. sales organization have named C. F. Bingham, formerly manager of Pigment sales, assistant director of sales. J. F. Dockum, formerly Philadelphia, Pa., district sales manager, also has been appointed assistant director of sales.

Both Mr. Bingham and Mr. Dockum will be located at the corporation's headquarters in Pittsburgh, Pa.

P. A. Fodor, formerly of the Market Research and Development Department, will succeed Mr. Dockum as Philadelphia district sales manager. R. M. Simpson will become acting manager of Pigment sales.

E. M. Rollins was named district sales manager at Dallas, Texas, with sales supervision of the Houston, Texas, and New Orleans, La., branch sales offices.

Moving from the corporation's Barberton, Ohio, plant Technical Service Department to the Market Research and Development Department will be C. J. Stroemple.

JEFFREY MANUFACTURING CO., Columbus, Ohio, recently announced major changes in the industrial sales organization.

Lincoln Kilbourne becomes manager of sales, Conveyor Division. C. G. Hawley, district manager at Jacksonville, replaces Mr. Kilbourne. L. Cole, sales engineer in the Columbus territory, has been named district manager of the Jacksonville office, replacing Mr. Hawley.

Paul Lawall, formerly district manager of the New York office, returns to the home office in Columbus as manager of sales, General Engineering Division. R. W. Sweitzer, district manager of the Philadelphia office, takes over Mr. Lawall's job in New York. W. K. Myers, district manager in Boston, moves to Philadelphia and will be in charge there. Paul Hendry, who has been working out of the Milwaukee office, becomes district manager at Boston.

CORN PRODUCTS REFINING CO. has elected to the board, James A. Moffett and Robert W. White.

Mr. Moffett joined the company in 1935, and was named manager of the Foreign Department after his release from the U. S. Navy after the war. In 1949, he was elected a vice-president.

Mr. White is a member of Robert White Associates, business consultants. Prior to 1949, Mr. White was secretary of the Union Carbide and Carbon Corp.

Millard F. Hayes Jr., field engineer with The Sandy Hill Iron & Brass Works, has left for his bi-annual extended tour of Central and South America. Mr. Hayes expects to be gone until the first week in December. During his tour he will solidify Sandy Hill's South American representation and further build up representative organizations now established in Sao Paulo, Buenos Aires and Rio de Janeiro.

BUILDERS-PROVIDENCE, INC., % Proportioneers, Inc.%, and Omega Machine Co., have appointed new personnel in Pittsburgh, Minneapolis, and Providence.

Douglass Taber has joined the company as manager of the Pittsburgh office. Since 1936, Mr. Taber has been associated with Greeley and Hansen Consulting Engineers of Chicago. Alden Carpenter, formerly with Hitchcock and Estabrook, consulting engineers of Minneapolis, will be in charge of the Minneapolis office located at 221 Sexton Bldg. Raymond McIndoe, formerly with the Penna. Dept. of Health, has been appointed assistant manager of the Standard and Engineered Products Div. of Builders-Providence, Inc.

ALBANY FELT CO. has installed a new 600-inch papermakers' felt loom which will permit increased production. The machine was built by the Crompton Knowles Loom Works, of Worcester, Mass., and is the largest of its kind ever made in the country. The speed of the shuttle, which carries the filling yarn to the loom, is approximately 30 miles per hour.

ELLIOTT CO. has added J. S. Askey to the staff of the Ridgway Division, Ridgway, Pa., as assistant works manager. Mr. Askey was formerly superintendent of manufacture, Transportation and Generator Division of the Westinghouse Electric Corp., East Pittsburgh, Pa. His previous experience includes both engineering and manufacturing supervision of coils and insulation of large rotating electrical apparatus as well as mica products. He has several patents in the field of windings and insulation and has published numerous papers and technical articles.

DIETZ MACHINE WORKS celebrated their 50th Anniversary on September 1, 1951 with Rowland G. Dietz as managing partner and Frank R. Rosen as partner. These two partners have been successfully associated, with equal interests, in this business and also Frank R. Rosen, Inc., manufacturers of stainless steel equipment at 2022 North Hancock Street, Philadelphia. Each partner is the directing head respectively of the companies bearing their names.

CONFUSION?

The American Paper & Pulp Co., Inc., of 300 Fourth Avenue, New York 10, N. Y., desires to announce that it is in no way connected with the American Paper & Pulp Assn. which has offices at 120 East 42nd Street, New York 17, N. Y. The American Paper and Pulp Co., Inc., concerns itself solely with the export and import of paper and pulp as a private trading corporation.

Left: Horizontal feed section receives wood chips from storage silos and elevates to adjacent building and digesters. S-A Circular Bin Dischargers under each silo, feed chips into the REDLER.

Handle WOOD CHIPS

Easier

Faster

At Lower Cost

with

REDLER

"Continuous-Flow"

Conveyor-Elevators

Wood chips move in a compact stream through the casing of a REDLER which conveys and elevates horizontally, vertically, up inclines and around bend corners. REDLERS often combine the functions of a feeder, a conveyor and an elevator . . . in a single handling unit.

REDLER conveying action consists of skeleton flights linked together and moving through the totally enclosed casings to induce the gentle mass movement of material in any direction. Comparatively small cross section of REDLER casing means that less space is required and casings can be installed without major alterations to existing structures.

REDLERS are the modern, low-cost way to handle wood chips. Write for Catalog 140 which gives complete information . . . no obligation.

Cross-section of standard REDLER casing. This shows material moving with carrying flights in lower run and empty flights returning in circuit fashion in the upper run.

1901-1951

50 years experience with bulk handling

STEPHEN S-A DAMSON

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Since 1929

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POSITIVE
Reg. U. S. Pat. Off.
High Speed Disc Refiner
THE BAHR BROTHERS MFG. CO.
MARION, INDIANA, U.S.A.

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WEIGHTOMETER
Wood Chips, Salt Cake, Sulphur, Coal, Etc.
MERRICK SCALE MFG. CO.
PASSAIC, NEW JERSEY

The Controlled Flow
VICTORY BEATER
is manufactured by
THE NOBLE & WOOD MACHINE CO.
Paper Mill Machinery
Hoosick Falls • New York • U. S. A.

FIBER RESEARCH AND SERVICE
Semi-Chem. and Chemical Pulp Processes
Pilot Plant Facilities
THE KINSLEY CHEMICAL COMPANY
Cleveland 11, Ohio

MISCO
STAINLESS STEEL CASTINGS
FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
DETROIT 7, MICHIGAN

Midwest Fulton New Beater

The Midwest-Smith automatic continuous beater is a new development in equipment for refining paper making fibre in a continuous process under very close control.

The partjcular function of this beater is to provide a means whereby any kind of fibre may be treated continuously, to develop the maximum desirable mullen, tensile and tear characteristics. It is designed for such extreme flexibility that it will produce a fibre for maximum density and finish, or maximum porosity for such grades as cement bag papers.

A conservative estimtae of power saving, would range from 30% to 50% depending upon the type of equipment used previously. This is partially due to the fact that no power whatever is required for circulating stock, and secondly, that there is no actual metal to metal contact between roll and bedplate.

Since this beater is of the continuous type, it has no tub or vat, the roll being enclosed in a closely fitting pressure housing, so that the stock is at all times under gradually increasing pressure.

For those interested in comparing beating characteristics based on contact surfaces, it might be stated that the roll is designed with 120 bar projections each 7/8" wide by 60" long. Each of the three bedplates have 24 bars 3/8" wide by 60" long.

To determine the hydration, or wet beating factor as developed by Milne, it is necessary to multiply the combined width of all the roll bars by the combined width of the bedplate bars, then by the face of the roll, and finally by the roll speed.

Thus in this case, the combined width of the roll bars is 105", the bedplates 45", the roll face 60" and the roll speed 157 RPM.

This results in a wet beating factor of 44,509,500 square inches of contact surface per minute.

As may be seen from the accompanying photographs, the machine consists of a beater roll mounted in a fixed position, in anti-friction bearings, and enclosed in a housing containing three bedplates, each of which is independently adjustable to the roll.

The outstanding feature of this beater is the manner in which the pulp, entering the beater through the vertical nozzle shown in the photograph, is given repeated treatment as it passes horizontally along the face of the roll, until it is finally discharged through the nozzle on the opposite end of the hood.

As the stock first enters the hood, it passes directly under the roll in a comparatively narrow path, receiving its first brushing treatment. As this pulp moves upward in a closely confined space, it is guided by means of spiral vanes in the hood, back down again between roll and bedplates, into the adjacent channel. This is repeated a number of times as the stock moves across the face of the beater roll, and is finally discharged.

In the Midwest-Smith continuous beater, there is no metal to metal contact, but rather, a true rubbing or brushing of the fibres, repeated over and over, with no resulting destruction of the brushing surfaces.

As an indication of the work this beater has accomplished on Northern Kraft, it is possible to obtain a freeness drop of 150 C.C. to 200 C.C. through a single machine, and that over a period of more than two years, there was no apparent wear on the roll or bedplate surfaces.

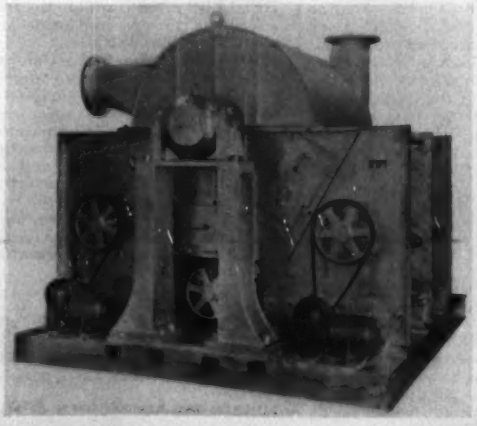

Figure 1

End View: Complete Assembly

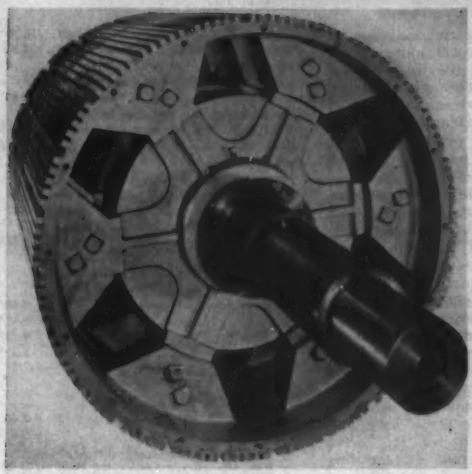

Figure 2—End View: Beater Roll Showing Internal Construction.

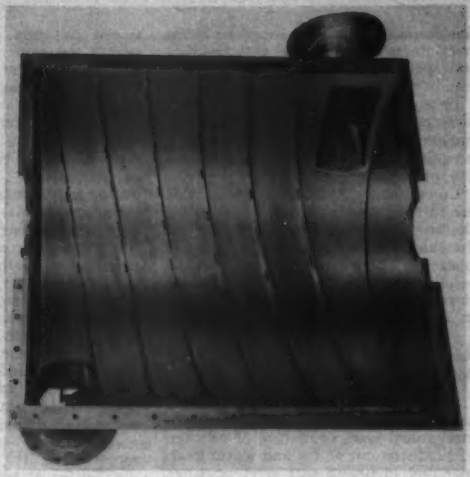

Figure 3—Side View: Showing Adjusting Mechanism

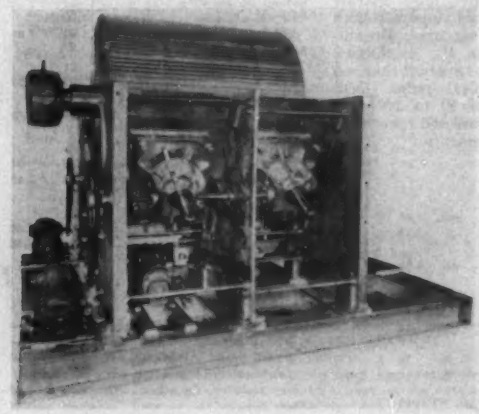

Figure 4—Beater Hood: Showing Internal Guide Vanes

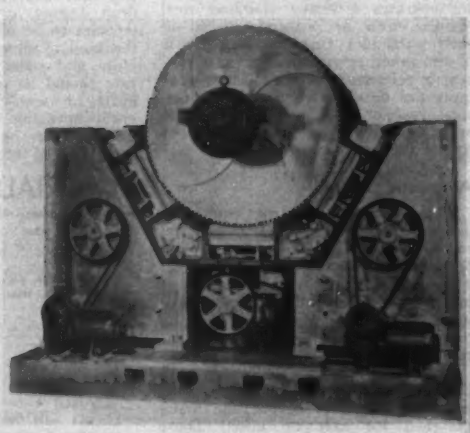

Figure 5—End View: Assembly, With End Plate and Hood Removed

This beater is designed to be used as a single unit, serving one machine up to fifty or sixty tons capacity, or may be combined with two or more units in series, or arranged in tandem, for proportionally greater production.

Each unit is completely assembled and shipped as a unit, ready for installation, with the exception of the driving motor and connecting drive. The unit may be driven by means of a flat belt, V-belts or silent chain drive. Motors should be 200 H.P. or larger.

In most cases, a motor used to drive an existing Jordan in the average kraft mill may be used to drive this beater. Such motors are generally of 250 H.P. or greater, and would be suitable for use in this beater.

The Beater Roll

The roll used in this beater is of an entirely new design, consisting of an exceptionally heavy forged steel shaft, on which are mounted four cast steel spiders. To these spiders are bolted the rim sections of the roll, these sections being cast of a special chrome vanadium alloy semi-steel. There are four

rim sections, cast in a complete cylindrical form 54" diameter, with the bars and spaces between bars forming the rim.

In a beater of this type, the stock undergoing treatment is pumped into the inlet under approximately 60# pressure, and preferably at a constant density of from 6% to 8%.

Consequently, the bar projections on the roll are only sufficient to provide a shallow pocket between bars, so that the stock is alternately compressed and released. There is no necessity for depending upon the roll bars to provide circulation of the stock, as is the case in conventional beater roll designs.

Retainer Boxes Adjusting Mechanism

The mechanism which controls the movement of the bedplates, is of the mechanical type, consisting of two sets of precision cut worm and worm gears mounted in heavy cast steel housings, and connected through rigid couplings for synchronized movement. Each gear set operates a heavy stainless steel lighter screw or pushrod, spaced in such a manner that the bedplate is moved in either direction in exact concentric relation to the roll. These gear units are designed to sustain a pressure reaction in excess of 50,000# each, equivalent to 70# pressure per square inch on each plate.

Automatic Controls

The automatic control equipment used on this beater is a special arrangement of the Taylor beater roll pressure control system.

Since each of the three bedplates is independently controlled, there is provided a three-pen pressure recording control instrument, permitting a separate adjustment of each plate.

Limit switches are provided on each bedplate assembly, to prevent movement of the plates beyond the limits designed for safe operation. These switches are adjustable to compensate for wear.

In operation, the plates are adjusted for any predetermined fibre treatment, the one nearest the inlet, being preferably adjusted with a wider gap between roll and bedplate surfaces to permit the stock to enter more easily.

The movement of the bedplate assembly is controlled through reversing switches, which in turn operate a small gear reduction unit driven by means of a chain drive to the worm gear shaft controlling the two pushrods beneath each bedplate.

Normally, once the proper adjustment has been made, for any given or desired freeness drop on the stock, the pressure control instrument will maintain the adjustment, unless there is some change in the stock density or quantity of stock entering the beater. When such changes occur, the instrument will compensate by increasing or decreasing the pressure to maintain the same fibre treatment.

The control instrument is mounted upon a panel board equipped with the necessary manual control switches, main starting switch for the drive motor, and if desired a recording watt meter or ammeter.

The production rate in tons per day will depend upon the freeness drop desired, or other fibre characteristics to be obtained, together with the kind of fibre being used. On sulphite and soda pulp, the production rate should be much greater than on kraft or semi-chemical pulps. Generally speaking from 50 to 100 tons of pulp can be processed per unit, according to requirements.

MATERIALS

Aluminum sulfate:		
comml. bags, wks. cwt.	1.65	
iron-free c.l cwt.	3.35	
Alcohol, ethyl:		
tax free, dms. c.l. gal.	1.01	/ 1.05½
Acid Free Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dms.		
c.l. fit. alld. gal.	.44	
Casein, acid prec.:		
dom. sh. pt. c.l. lb.	.36	/ .41½
imp. ex. dock lb.	.27¾	/ .36
Caustic soda:		
c.l. wks. solid, 76%. cwt.	3.35	
flak. & grd. 100-lb drums	3.75	
liquid 50% tanks	2.55	
liquid 70% tanks	2.65	
China clay:		
dom. air-float. filler, c.l. wks. ton	10.00	
water-washed, coating, filler	11.00	
coating ton	17.60	/30.50
imported, ex whse. short ton	15.30	/28.35
Chlorine:		
single-unit tanks, works cwt.	2.70	
multi-unit cwt.	3.26	/ 4.40
Formaldehyde:		
USP, inh. dms, c.l. wks. lb.	.0625	/ .0675
L.c.l., E. wks.	.0675	/ .0725
Fuel oil:		
Bunker C, No. 6 Cal. bvy tanks, refinery bbl.	1.95	/ 2.15
light bbl.	2.00	/ 2.25
Hydrogen peroxide:		
USP, 35% obys. E. of Miss. lb.	.23½	/ .26½
Lime:		
hydrated, bags, wks. ton	13.50	
Rosin:		
B gum, drms, c.l. Savan. cwt.	7.00	/ 9.00*
G cwt.	9.05	/ 9.40*
H, I, K cwt.	9.15	/ 9.40*
FF, wood, do. cwt.	6.80	/ 7.30*
*OPS Ceiling, CPR 52.		
Rosin size:		
70%, gum & pale grds, tank cars, south, sh. pt. cwt.	7.50	/ 7.60
Salt cake:		
dom. bulk, c.l. wks. ton	17.00	
wks. frt. all. ton	20.00	/22.00
Soda ash:		
light, 58%, bags, wks.	1.30	
bulk cwt.	1.20	
Sodium silicate 40°:		
turbid. c.l. wks. cwt.	1.30	/
L.c.l. wks.	1.40	/ 1.80
Sodium peroxide:		
dms. c.l. E. of Miss. lb.	.21	
l.c.l. do. lb.	.21½	/ .22
Soybean, protein:		
chem. isol, wks. c.l. lb.	.24	/ .28
Cinn. and Chic.		
Sulfuric acid:		
60° Be. obys. cl. wks. cwt.	1.75	/ —
L.c.l. wks. cwt.	2.05	/ 2.85
Sulfur:		
crude, c.l. mines, contract, long ton	21.00	/22.00
f.o.b vessels Gulf long ton	22.50	/23.50
Sulfur dioxide:		
liquid, comml. cyl. wks. lb.	.09	
multi-unit cars lb.	.0535	
Starches:		
pearl corn, bags, c.l. wks. cwt.	6.09	/ —
white dextrines, c.l. wks. cwt.	7.48	/ —
potato, Idaho, c.l. wks. cwt.	5.75	/ —
potato, Maine, c.l. wks. cwt.	nominal	
tapioca, conv. dextrines. cwt.	6.50	/ 6.75
Talc:		
domestic, 50-lb. sacks, c.l. whs. ton	25.00	/30.00
Titanium dioxide:		
anastase, c.l. deld., bags lb.	.21	/ .21½
l.c.l. deld. lb.	.22	/ .22½
rutile, c.l. deld. lb.	.23	/ .23½
c.l. deld lb.	.24	/ .24½

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1500 No. Hooker Street • Chicago 22, Ill.

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports

Rolls, contract, per ton	$114.00/116.00
Sheets	130.00/ —

F.o.b. Mills, C.l. Frt. allowed, dock, N. Y.

Kraft—per cwt. 50# base wgt. OPS Ceiling CPR 88

Standard Wrapping, ctr. rolls	$7.75/ —
Butchers, counter rolls	8.25/ —
Standard Bag, mill rolls	7.50/ —
Shipping Sack, mill rolls	7.75/ —
Gumming, mill rolls	8.00/ —
Asphalting, mill rolls	7.75/ —
Envelope, Sub. 20, mill rolls	9.25/ —

Tissues—per ream 24x36 (480); 10 lbs. 2500 lbs or more

Wh. No. 1 Frd.	$2.25 / $2.40
Wh. No. 1 MG	2.25 / 2.40
Wh. No. 1½	1.95 / 2.05
Wh. No. 2	1.75 / 2.00
Kraft Anti-Tar 20x30	2.12 / 2.25
White Anti-Tar 20x30	2.20 / —

Toilet—per case or 100 rolls—1 M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5	6.60/ —
Bleached 4½x4½	10.00/12.50
Bleached 4½x5	9.85/ —
Per Case of 30 roll—2000 sheets	
Unbleached 4½x4½	$8.00/$9.75
Bleached 4½x4½	6.95/ —
Per Case of 100 rolls—1000 sheets	
Facial, 4½x4½, 2-ply	$9.95/10.15

Paper Towels—per case of 3750

Wh. Jr. M'tif'd 9½x9½	$6.40
Br. Jr. M'tif'd 9½x12	4.40
Br. Jr. M'tif'd 9½x9½	3.90
Br. Jr. Sgl. fold 9½x10½	3.95
Bleh. 7½x11, 24/25 rolls	$7.00/7.55

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets*	$20.55/22.55
Reg. Jute M.F. 40-lb., sheets*	19.50/21.50
Wrapping Manila	8.75/10.50
Printing Manila	10.50/12.00

* Less usual allowance for rolls.

Gummed Tape—per bdl., 300 bdls. or more

90-lb. 375 ft. GSI	$7.20 / —
60-lb. 600 ft. GSI	7.20 / —
35-lb. 800 ft. GSI	8.28 / —
35-lb. 500 ft. GSO	6.21 / —

MARKET WOOD PULP

Fourth Quarter Contract Prices. Per Short Air-Dry Ton

	Varying freight allowances *U. S.	Varying freight allowances Canadian	On Dock Atlantic Ports *Swedish	On Dock Atlantic Ports *Finnish	On Dock Atlantic Ports *Norwegian
Groundwood	$92.50/ —	$395.00/100.00			
Sulfate, Bleached	145.00/ —	190.00/200.00	$230.00/ —	$230.00/ —	$230.00/ —
Semi-bleached Sulfate	140.00/ —				
Sulfate, Unbl.	132.50/ —	145.00/175.00	200.00/ —	200.00/ —	
Sulfite, Bichd.	140.00/ —	160.00/175.00	225.00/ —	225.00/ —	225.00/ —
Sulfite, Unbichd.	132.50/ —	150.00/160.00	200.00/ —	200.00/ —	
Sulfite, Unbl'd (Glassine)		164.00/ —			
Soda, Bichd.	140.00/ —	155.00/160.00			
Sulfite Screenings	72.50/ —				
Sulfate Screenings	67.50/ —				
Groundwood Screenings	60.00/ —				
Unbichd Sulfate Siderums	132.50/ —				
Stand. News. Siderums	92.50/ —	106.00 —			

* OPS Ceiling, CPR 49 ‡ F.o.b. Shipping Point.

Boards per ton—

Filled News	$107.50/ —
Plain Chip	105.00/107.50
Bichd. Mla. L-d. Chip	147.50/ —
White Pat. coated .030	170.00/ —
Kraft Liners 42 lb.	115.00/117.50
Kraft Corr. .009	122.50/126.00
Binders Boards	137.50/140.00

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—White, 20 lb.

Bonds	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$70.45/$75.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$72.65/$72.80
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	40.20/ —
25% Rag	33.00/ 34.30

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
Watermarked	$19.00/$20.50
Plain	18.40/ 19.50

Ledgers	4 Ctns.
	per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$23.90/$24.60
No. 2	22.15/ 23.40
No. 3	21.90/ 22.40
Machine Coated	
No. 1	$18.40/$18.90
No. 2	16.65/ —
Uncoated	
No. 1 Antique (Watermarked)	$18.65/$19.40
Offset	18.65/ 19.20
A Grade E. F.	18.10/ 19.20
A Grade S. C.	18.65/ 19.40
B Grade E. F.	18.40/ —
B Grade S. C.	17.40/ 19.15

‡ Indicates a price change.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28
Delivered Mill Basis

Add 7½% Dealer Commission

No. 1 White Shirts	$21.00
No. 1 Unbichd. Muslins	21.00
Bichd. & Unbichd. Underwears	21.00
Bichd. Canton Flannels	21.00
No. 1 Light Silesias	16.00
No. 1 Light Prints	11.00
No. 1 Blue Overalls	14.00
Suntan Khakis	11.00

Add 10% Dealer Commission

Fancy Shirts	$16.00
Indigo Blues	10.00
Mixed Khakis	8.00
Corduroys	8.00
Cottonades	8.00
No. 1 Washables	6.50

Old Domestic Cotton Rags
(Prices to Dealers, f.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$5.00/$5.50
Cotton Pants & Overalls	5.50/ 5.75
Thirds and Blues, Repacked	5.25/ 5.50
No. 1 Roofing Rags	1.65/ 1.75
No. 2 Roofing Rags	1.20/ 1.30
No. 3 & 4 Roofing Rags	1.10/ 1.20

Bagging
(Prices to Dealers, f.o.b. N. Y.)
PRICES NOMINAL

	Per 100 lbs.
Foreign Gunny	$5.00/$5.50
Domestic Gunny, No. 1	5.00/ 5.50
Heavy Wool Tares	5.50/ 6.00
Foreign Manila Rope	9.00/ 9.25
Domestic Manila Rope	9.00/ 9.25
Jute Strings	6.00/ 6.50
No. 1 Sisal Strings	8.50/ 8.75
Paper Mill Tares	5.25/ 5.50
Foreign Scrap Burlap	4.25/ 4.50
Domestic Scrap Burlap	4.75/ 5.00
Austr. Wool Pouches	7.00/ 7.50
New Burlap Cuttings	7.00/ 7.50

WASTE PAPER MARKET

Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) These quotations are an indication of the price range in each market on the date specified, as gathered from major dealers. Because of market instability, ALL PRICES ARE STRICTLY NOMINAL.

	New York Oct. 26	Philadelphia Oct. 3	Boston Oct. 13	Chicago Oct. 24
No. 1 Mixed Paper	nominal	$10.00/ 12.00	— / 13.00	$12.00/ —
No. 1 News	15.00/ 16.00	12.00/ 14.00	— / 15.00	15.00/ —
Over-issue News	19.00/ 20.00	20.00/ —	20.00/ 22.00	18.00/ —
Corrugated Containers	17.00/ 18.00	18.00/ 20.00	19.00/ 24.00	18.00/ —
Double Kraft Ld. Corr. Cuts	55.00/ 60.00	50.00/ —	55.00/ 70.00	55.00/ —
100% Kraft Corr. Cuts	65.00/ 80.00	80.00/ —	90.00/ —	85.00/ —
Used Sugar & Flour Bags	55.00/ 60.00	50.00/ —	45.00/ 70.00	50.00/ —
Super Resorted Br. Kraft	55.00/ 65.00	65.00/ 70.00	60.00/ 70.00	50.00/ —
New Br. Kraft Env. Cuts	120.00/130.00	125.00/ —	120.00/140.00	100.00/ —
New Br. Kraft Cuts	100.00/110.00	115.00/ —	110.00/140.00	90.00/ —
No. 1 Gdwd Shvs.	50.00/ 60.00	16.00/ 50.00	65.00/ 75.00	35.00/ —
White Newsblanks	75.00/ 80.00	50.00/ 70.00	70.00/ 80.00	55.00/ —
No. 1 Flyleaf Shvs.	65.00/ 70.00	50.00/ 65.00	85.00/100.00	60.00/ —
No. 1 Soft Wht. Shvs.	135.00/145.00	133.00/145.00	140.00/165.00	125.00/ —
Super Soft Wht. Shvs.	160.00/175.00	150.00/165.00	155.00/180.00	135.00/ —
Hd. Wht. Shvs.	165.00/180.00	170.00/180.00	170.00/180.00	140.00/ —
Hd. Wht. Env. Cuts	180.00/200.00	190.00/210.00	190.00/200.00	150.00/ —
New Manila Env. Cuts	100.00/135.00	130.00/140.00	130.00/155.00	65.00/ —
Col. Tab Cards	90.00/ 95.00	75.00/100.00	85.00/110.00	85.00/ —
Manila Tab Cards	115.00/125.00	125.00/140.00	140.00/160.00	100.00/ —
No. 1 Mixed Ledger	85.00/ 95.00	75.00/ 85.00	67.00/ 90.00	95.00/ —
White Ledger	105.00/115.00	105.00/115.00	95.00/110.00	110.00/ —
No. 1 Book & Mag.†	33.00/ 37.00	23.00/ 30.00	30.00/ 50.00	17.00/ —
No. 1 Rep'd. Hvy. Books‡	43.00/ 50.00	30.00/ 40.00	45.00/ 60.00	40.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood.

CLEARING HOUSE

HELP WANTED

MEN WANTED— POSITIONS OPEN

We can place—Superintendents and asst. supts. for board mills; production mgr., supts. and foremen for paper converting depts., $6,000-$12,000 yr.; process and instrumentation engineer with mechanical or electrical degree.

Mechanical, design and process engineers; master mechanics; maintenance man; boss finisher rag onion skin papers and lightweight specialties; night supt. of printing; safety engineer large mill, also qualified to work in woods; chemists and chemical engineers; sales mgr., gumming, die cutting, printing, bag making, etc.; salesman with folding carton experience for Metropolitan area; supervisor receiving dept.; tour bosses; machine tenders and back tenders.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.

SPECIALISTS IN PLACING PULP AND PAPER MILL EXECUTIVES

N-2

AN UNUSUAL OPPORTUNITY FOR CHEMIST AND QUALITY CONTROL MAN familiar with Folding Boards. Excellent chance for advancement.

State complete details and experience in first letter. Address Box 51-547 care Paper Trade Journal.

N-16

DESIGN MECHANICAL ENGINEER

For established mid-west converter of light weight board, paper and films. Duties—to design and supervise building of new converting equipment. Experience necessary—minimum of 5 to 10 years of designing paper converting machinery. Please give complete brochure of education, experience and salary requirements. Address Box 51-541 care Paper Trade Journal.

N-2

BEATER ROOM FOREMAN

Excellent opening available for experienced shift beater room foreman for fine grades of paper. Must be good on colors and handling men. Location West Coast. Give complete details first letter. Address replies to Box 51-564, c/o Paper Trade Journal. N-23

HELP WANTED

Personnel Service Associates

115 State St., Springfield 3, Mass.

Personnel Consultants

Confidential Placement Service for Employers and Employees in the Pulp and Paper Industries and Allied Trades. Executive-Administrative-Sales-Office

Correspondence Invited. N-2

SULFITE FOREMAN

West Coast Pulp and Paper Mill needs an experienced sulphite pulp mill shift foreman. Give complete resume of experience and availability in first letter. Excellent opportunity with progressive company. Address replies to Box 51-563 c/o Paper Trade Journal. N-23

Wanted: Power Plant Chief Engineer

Must be experienced operations and maintenance of boilers and steam turbines. Employment in small paper mill operating in the Southwest. To take charge of power plant generating about 4000 kilowatts.

Please state training, experience and starting salary expected in the first letter.
Address Box 51-545 care Paper Trade Journal N-2

PAPER MILL ENGINEERS

Engineering construction organization with extensive pulp and paper mill projects under way has immediate openings in New York office for paper mill design and layout Engineers. Please give complete engineering and biographical background in first letter. Write Box 51-509 care Paper Trade Journal.

N-2

?? YOUR OPPORTUNITY ??

Would you be interested in a good paying position in a progressive paper mill in northeastern New England? We need an experienced chemist who has a college degree in chemistry and a productive interest in the development of commercial formulas for surface coatings of fabrics. A knowledge of organic chemistry, film forms, pigments, and coloring materials are particularly essential. Such job will serve as training ground for production executive for man with ability and ambition. If you meet our requirements, write giving full details and salary required. Address Box 51-570 care Paper Trade Journal. N-2

HELP WANTED

SALARIED POSITIONS $3,500 to $25,000. We offer the original personal employment service (established 41 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

WANTED—Master Mechanic or Assistant for modern 3-Machine Tissue Mill. Progressive management; expansion program now under way. Fine opportunity for young/middle aged man to advance. Substantial paper mill mechanical experience with electrical background desirable. Give complete resume of experience in letter to Box 51-442 care Paper Trade Journal. Replies held strictly confidential. TF

WANTED — SALES ENGINEER — Experienced in Pulp and Paper Mills, for sales and service work in the South. Excellent opportunity with old established machinery manufacturer. In reply give resume of education, experience and current salary. Address Box 51-482 care Paper Trade Journal. N-9

SALES ENGINEER—Engineer with pulp mill experience wanted by well established machinery firm. Opportunity for advancement. Address Box 51-516 care Paper Trade Journal. TF

WANTED — Machine Tenders and Back Tenders for corrugating medium and liner mill. Fourdrinier and cylinder machines. Located in Western Pennsylvania; good working conditions; pleasant surroundings and very good labor relations. Call collect—Tarentum 1470, TARENTUM PRODUCTS CORPORATION, Tarentum, Pa. TF

WORKING SUPERINTENDENT for small fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-67 care Paper Trade Journal. TF

EASTERN CONVERTER wants oil-ink Pressman acquainted paper napkin manufacture. Reply in confidence to Box 51-511 care Paper Trade Journal. N-2

WANTED—A Working Master Mechanic with paper mill experience, by a one machine Ohio Paper Board Mill. Give complete resume of experience and salary expected. All replies confidential. Our employees know of this advertisement. Address Box 51-522 care Paper Trade Journal. N-2

TOUR BOSS—Experienced cylinder machine tender for position as Tour Boss, Rotating shifts. Mill located in western Massachusetts. Address Box 51-543 care Paper Trade Journal. N-9

ONE MACHINE MIDWESTERN fine paper mill has opening for Superintendent of Receiving, Finishing and Shipping. References required. Address Box 51-555 care Paper Trade Journal. TF

PAPER SALESMAN WANTED for established Philadelphia Paper Jobber. Can use man looking for a better opportunity or one that wants to make an investment in a business. We carry items for industrial plants and stores. Address Box 51-544 care Paper Trade Journal. N-2

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—75c a line. Minimum charge $3.75.
SITUATIONS WANTED—75c a line. Minimum charge $3.75. If repeated ½ rate will be charged for each consecutive repetition.
FOR SALE—75c a line. Minimum charge $3.75
WANTED—75c a line. Minimum charge $3.75.
OPPORTUNITIES—75c a line. Minimum charge $3.75.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance.

If box number is used—70 cents additional

Address replies to advertisements appearing under Box Number in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

HELP WANTED

FINE PAPER MILL: Middle Atlantic Area has long range opportunity for technically trained man in production control and development. Experience preferred but not essential. Excellent possibilities for right man. Address Box 51-568 care Paper Trade Journal. N-23

FOREMAN WANTED for the Filming Department of Specialty Paper Converting mill. Must be familiar with grinding of the stones, setting up the machines and quality control. Address Box 51-567 care Paper Trade Journal. N-2

WANTED—Experienced Glue Foreman. Take charge finishing department having International Straight Line and FZ Glazer, Waxer, Cello Window Machine. A fine opportunity, excellent labor relations. Medium size plant, middle west. Address Box 51-566 care Paper Trade Journal. N-9

PROCESS ENGINEER—College graduate with 4 years experience in Pulp and Paper Mill. Permanent position, San Francisco Bay area. Address Box 51-557 care Paper Trade Journal. N-9

RESEARCH CHEMIST:—Excellent opportunity for chemist or chemical engineer in research laboratory of large chemical company. Require man with several years experience in paper industry, preferably with advanced degree. Submit resume. Address Box 51-536 care Paper Trade Journal. N-23

SITUATIONS WANTED

SUPERINTENDENT — Thoroughly experienced papermaker desires to make new connections. Conventional or Yankee Fourdriniers, light and heavyweight specialties. References. Address Box 51-487 care Paper Trade Journal. D-28

RESEARCH DIRECTOR in paper converting, plastic coatings, functional, ordnance industrial papers, tapes, extrusions, 20 years experience, know how ideas and initiative. Patents pending. Address Box 51-552 care Paper Trade Journal. N-2

PART TIME on Consulting work sought in Metropolitan Area. Formulation of items in functional, ordnance, industrial, packaging line, tapes, paper, sheeting, cloth, laminates, extrusion. 9 years experience in directing research. Address Box 51-551 care Paper Trade Journal. N-2

PULP AND PAPER CHEMIST—28; single; graduate NYS College of Forestry; employed by research organization for paper product development. Desires position in technical department of pulp and paper mill or in production. North eastern location preferred. Address Box 51-549 care Paper Trade Journal. N-9

PLANT MANAGER—Paper and Board and their conversion; wants challenging opportunity. Highly successful in organization; administration; labor relations and high level production. Presently employed. Address Box 51-463 care Paper Trade Journal. N-30

SITUATIONS WANTED

SALESMAN—with fifty years experience, wants to represent manufacturers of: Fine and Book Papers, Card Boards and Envelopes. As a Mill Agent, on lines which are stocked for direct shipment to Buffalo, N. Y. Address Box 51-554 care Paper Trade Journal. N-2

SALES ENGINEER—A "self-starter" and likes to work. Willing to assume responsibility. Now employed in the paper industry. Desires a new connection—willing to relocate. Address Box 51-513 care Paper Trade Journal. N-2

CHEMICAL ENGINEER—30 years technical and management experience, paper coating, coated abrasives, coating and converting machinery, resins and specialties. Desire technical or production position with established company. Address Box 51-471 care Paper Trade Journal. N-23

FOR SALE

PAPER COATING MACHINERY MANUFACTURERS—Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE

1—Sandusky Couch Roll—126" drilled face x 22" diameter.
1—123" 3 bowl revolving reel.

BEARINGS
72—Top and bottom Dryer Bearings 7" diameter x 12" long.

BEATERS
1—Dilts Iron Tub Laboratory Beater. Beater roll 14" diameter x 10¼" face.
1—Noble & Wood Cast Iron Beater—1000# capacity—roll newly refilled.

CALENDER STACKS
1—9 roll 66" Calender Stack.
1—3 roll pressure calender—32" x 108".
1—72" 4 roll calender stack. (Extra heavy duty).
1—44" Smoothing Calender Stack, 2 Iron Rolls, 2 Cotton Rolls.
1—60" 3 roll friction calender stack. All iron rolls.

CHEST
1—Cast Iron Stock Chest, 25' long x 6' high. (With agitator).

CHIPPER
1—96" Murray 4 knife Chipper—anti-friction bearings.

CLASSIFINER
1—Dilts Classifiner, practically new, with motor.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Jeffrey Hammermill.

CYLINDER MOLDS
2—30" diameter x 72" face.
1—36" diameter x 79" face.
5—36" diameter x 54" face.
1—38" diameter x 96" face.
1—48" diameter x 72" face.
1—38" diameter x 92" face.
1—38" diameter x 72" face.

DRIVES
1—Jones Reducer 75 h.p.—30.8 to 1.
1—#6½ Reeves Drive.
1—#4 Reeves Drive
1—Reliance Electric Drive, complete with 5 gear head motors.
1—#3 Reeves Drive (totally enclosed).

DRYERS
1—Complete unit, consisting of 6 dryers, 38" diameter x 58" face, including frames, rears, anti-friction bearings.
7—24" diameter x 48" face.
1—36" diameter x 143" face.
1—48" diameter x 70" face.
3—Dryers 48" diameter x 134" face.
1—24" diameter x 92½" face.
3—28" diameter x 48" face.
1—84" diameter x 48" face.
1—60" diameter x 60" face.
1—30" diameter x 60" face.
1—30" diameter x 61" face, complete with frames.
8—24" diameter x 60" face.

GUILLOTINE CUTTER
1—60" Cutter.

FLAT SCREENS
1—6 plate Shartle Flat Screen.
2—Pusher, 12 plate, roller shoe type.
1—6 plate Sandy Hill (Packer).

JORDANS
1—Hurne Jordan.
4—Noble & Wood Mammoth.

LIME SLUDGE FILTERS
2—IMPCO Lime Sludge Filters, vacuum type. 5' diameter x 4' face.

MOTORS
Write us regarding your requirements.

PRESSES
3—Beau Primary Presses, complete, 145" face. Anti-friction bearings. Also all types of rolls for 145" wet end.

PULLEYS
Various cone and assorted pulleys.

PULPERS
1—Jones Pulper. Complete with motor and drive.
1—Noble & Wood Pulper—Iron Tub.
1—Lannaye Pulper.

PUMPS
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.
4—Shartle Brothers circulating pumps, each 4,000 g.p.m.

REELS
1—123"—3 bowl Revolving Reel.
1—72" Dowingtown Reel, 2 bowl.

REFINERS
2—#1 Claflin Refiners.

ROLLS
Pick, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2 Bird Rotary Screen.
1—#2A Bird Rotary Screen.

SAVEALLS
1—#5 Bird Saveall.
2—Savealls, 36" diameter x 136" face cylinder molds, iron end vats.

SHEETER
1—49" Clark Sheeter, 8 roll backstand.

SHREDDERS
2—Daniels Rag Cutters.

SLITTERS & WINDER
1—115" 2 drum Waldron
2—112" Cameron—Type 18.
1—104" Beloit two drum winder.
1—88" Moore & White 4 drum winder.
1—82" Cameron—Type 10-10.
1—82" Cameron—Type 26-3A.
1—60" Langston (Shear cut).
1—52" Cameron—Type 8-5.
1—42" Cameron Constant Tension with pneumatic control.
1—42" Cameron—Type 6.
1—42" Johnstone Slitter.
1—62" Cameron—Type 10.
1—72" Cameron—Type 8-10.
1—72" Cameron—Type 10.
1—36" Langston.
2—42" Cameron Type 40-1-AF

STOCK PUMPS
1—10 x 20 Shartle Duplex.
1—9 x 16 Shartle Duplex.
2—10 x 10 Beloit Duplex, low type, with motors.
Advise us to your requirements.

SUCTION COUCH ROLL
1—Sandusky Couch Roll 126" drilled face x 22" diameter

SUCTION BOXES
3—136" face Suction Boxes.

THICKENER
1—IMPCO Thickener—Cylinder mold 36 x 78.

TOILET WINDERS
2—72" Hudson-Sharp (Surface type winder).

VACUUM PUMPS
1—M-82 Nash, for Fulton-Midwest System.

WET MACHINE
1—77" Rogers Wet Machine.

YANKEE DRYERS
1—48" Face x 84" Diameter, Frames & Bearings.
1—68" face x 60" diameter including frames and anti-friction bearings.
1—84" face x 60" diameter, including frames and bearings, also 3 dryers 20" diameter x 64" face.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?
Wooled Cylinder and Fourdrinier Machines (complete mills).

Paddy Ross, Pres. **J. J. ROSS COMPANY** **Ben Kurz, Treas.**
250 Frelinghuysen Ave. **Tel.—Bigelow 3-3720** **Newark 5, N. J.**

FOR SALE

FOR SALE

1—8 ft. x 14 ft. Impco brown stock washer, stainless steel wire with repulper
1—6 ft. x 8 ft. Oliver Young burn stock washer, stainless steel wires, with repulper
2—6 x 6 pulp bleach cylinders with agitators
3—Trimbey knotters with stainless steel plates
1—6 x 8 Oliver docker
1—150" Covel Hanchett knife grinder
1—90" four knife vari chipper
3—Jones pulpers with reducers
3—Downingtown suction felt rolls 100" face
1—110" and 1—100" Voith inlet
1—100" #10 Camachine
2—4 cylinder Lancaster Washers

FRANK H. DAVIS COMPANY
175 Richdale Ave., Cambridge, 40, Mass.—I
N-16

FOR SALE

Two or Three Paper Machines, Cylinder or Fourdrinier, Trim 44", 48" diameter dryers chromium plated. Will rebuild to make any kind of paper and capacity to meet your needs.
Box 51-505 c/o Paper Trade Journal
TF

FOR SALE

1—136" Fourdrinier Paper Machine with dryers 42" dia., 132" face. Can furnish 13 or 33 dryers to suit your needs. Will rebuild machine to make grades you desire.

Osborne Paper Mill Equipment Corp.
FULTON, N. Y. New Tel. #2-4254
TF

FOR SALE

Used dryers now operating on 40 lbs. steam pressure.

34 dryers—48" x 124"
32 dryers—48" x 118"

Box #51-523 care Paper Trade Journal.
N-30

For Sale and Wanted
all grades

WASTE PAPER

GIOVE CO., INC.
857 Water St., N. Y. OLegon 3-6146-1-3-3
Inquiries Solicited N-2

MACHINERY FOR SALE

1 SHARTLE BROS. - MIAMI CENTRAP, with 30 h.p.-440 V Motor, V-Belt Drive; also basket lifting device. Used for centrifugal dirt separation, capacity 1500 lbs. per hour.
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WANTED

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N-9

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WANTED

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Wheeler Roll Co.

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Ross, J. O., Engrg. Corp.

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Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

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B. F. Goodrich Chemical Co.

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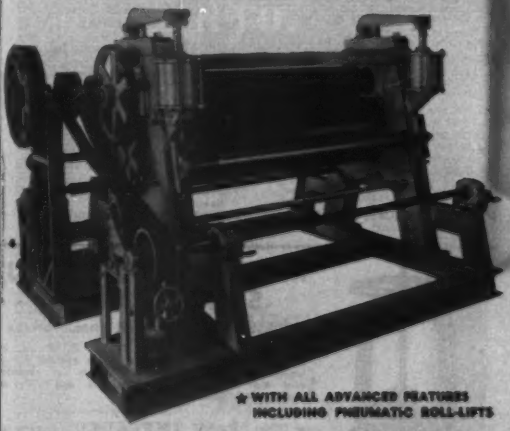

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Holyoke Machine Co.
Lobdell United Co.
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Moore & White Co.
Potdevin Machine Co.
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Shartle Brothers Machine Co.
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Monsanto Chemical Company
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National Aluminate Corp.
Rohm & Haas Co.
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Rice Barton Corporation
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Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mch. Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
Pondevin Machine Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Corp.
Smith & Winchester Mfg. Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
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WIRE BRUSHES
M. W. Jenkins Sons, Inc.
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Appleton Wire Works
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INDEX TO ADVERTISERS

A

Adams, R. P., Co. —
Alexander Brothers —
Alpha-Cellulose Corp. 38
Allis-Chalmers Mfg. Co. —
American Cyanamid Co., Calco Chemicals Div. —
American Cyanamid Co., Industrial Chemicals Div. —
American Defibrator, Inc. —
American Steel & Wire Co. —
Ansul Chemical Co. —
Apsaw, Inc. —
Appleton Machine Co., The —
Appleton Wire Works, Inc. —
Appleton Woolen Mills — 38
Armco Drainage & Metal Products —
Armco Steel Corp. —
Asten-Hill Mfg. Co. —

B

Babcock & Wilcox Co. —
Bagley & Sewall Co. —
Bahr Bros. Mfg. Co. 40
Bailey Meter Co. —
Barcco Oil Co. —
Bauer Bros. Co. —
Beloit Iron Works 19
Bird Machine Co. —
Birk, F. Paul —
Birmingham Committee of 100 —
Bixby, R. W., Inc. 44
Black-Clawson Co. 8
Blaw-Knox Co. —
Bowther, N. P., Co. —
Brown Co. —
Brown Instrument Div., Minneapolis-Honeywell Reg. Co. —
Buffalo Pumps, Inc. —
Bulkley, Dunton Pulp Co. —
Bunge Pulp & Paper Co. —
Byron Jackson Co. —

C

Calgon, Inc. —
Cambridge Instrument Co. —
Cameron Machine Co. —
Canadian Newsprint Supply Co. —
Carnegie-Illinois Steel Corp. —
Carthage Machine Co. —
Chemical Mfg. Co. —
Chemipulp Process, Inc. —
Chicago Bridge & Iron Co. 2
Ciba Company —
Clark-Aiken Co. —
Clark Equipment Co. —
Classified Advertising 44
Cleveland Crane & Engrg. Co. —
Clinton Foods, Inc. —
Columbia-Southern Chem. Corp. —
Columbia Steel Co. —
Combustion Engineering - Superheater, Inc. —
Corn Products Sales Co. —
Crane Co. —
Crucible Steel Corp. of America —

D

Davis Co., Frank H. —
Deitz Machine Works —
De Laval Steam Turbine Co. 38
DeZurik Shower Co. —
Diamond Alkali Co. —
Dilts Machine Works 8
Dodge Manfg. Co. 25
Dow Chemical Co. 23
Downingtown Mfg. Co. —
Dracco Corp. —
Draper Brothers Co. —
du Pont, E. I., de Nemours & Co. Electrochemical Dept. —
du Pont, E. I., de Nemours & Co. Dyestuffs Dept. —
du Pont, E. I., de Nemours & Co. Grasselli Chem. Dept. —
du Pont, E. I., de Nemours & Co. Polychemicals Dept. —
Durkee Co., The —

E

Ebasco Services, Inc. 48
Egan, Frank, & Co. —
Elixman Paper Core Co. 37
Elwell Parker Elec. Co. —
English China Clays Sales Corp. —

F

Fabri Valve Co. of America —
Fairbanks Morse & Co. —
Farrel-Birmingham Co., Inc. —
Ferguson, The H. K., Co. 36
Fibremaking Processes 52
Fitchburg Screen Plate Co. —

G

Geigy Co. —
General Dyestuff Corp. —
General Electric Co. —
Georgia Kaolin Co. —
Gibbs-Brower Co. —
Glidden Co. —
Goodrich Co., B. F. 3
Goodrich Chemical Co. —
Goodyear Tire & Rubber Co. —
Goslin-Birmingham Mfg. Co. —
Gotham Ink & Color Co. —
Gottesman & Co. Front Cover
Graphic Arts Int. Corp. —
Grinnell Co., Inc. 20
Gruendler Crusher & Pulverizer Co. —
Gulf Oil Corp. 33
Gurley, W. & L. E. 48

H

Hamblet Machine Co. —
Harris-Seybold Co. —
Hart Moisture Meters —
Heppenstall Co. —
Hercules Powder Co. —
Heyden Chemical Co., Aktivin Div. —
Hoffi Co., Inc. —
Holyoke Machine Co. —
Hooker Electrochemical Co. —
Huber, J. M., Corp. —
Hubinger Co., The 49
Hudson-Sharp Machine Co. —
Hungerford & Terry, Inc. 54
Huyck, F. C., & Sons —

I

Industrial Raw Materials Corp. —
Inertol Co., Inc. 36
International Nickel Co. —
International Wire Works —

J

Jackson & Church Co. 15
Jagenberg-Werke Akt. Ges. —
Jeffrey Mfg. Co. —
Jenkins, M. W., Sons, Inc. —
Johnson Corp., The —
Johnson, Alvin H., & Co. 40
Jones, E. D., & Sons Co. 35

K

Kalamazoo Tank & Silo Co. —
Kinsley Chemical Co. 40
Knox Woolen Co. 55
Koppers Co., Inc. 4

L

Langston, Samuel M., Co. —
Libbey-Owens-Ford Glass Co. —
Lindsay Wire Weaving Co. —
Lobdell United Co. —
Lockport Felt Co. —
Lodding Engineering Co. —
Lovejoy Flexible Coupling Co. —
Lukens Steel Co. —
Lyddon Co. —
Lynch Corp. —

M

Magnus Metal Div., Nat. Lead Co. 54
Main, Charles T., Inc. 38
Manchester Machine Co. —
Manheim Mfg. & Belting Co. 13
Marietta Concrete Corp. 50
McBride, Edward J., Co. —
Mead Sales Co., The —
Meincke, A. M., & Son —
Meisel Press Mfg. Co. —
Merrick Scale Co. 40
Michigan Steel Casting Co. 40
Midwest Fulton Machine Co. —
Mine Safety Appliances Co. 17
Mixing Equipment Co. —
Monsanto Chemical Co. 13
Moore & White Co. 10
Morehead Electrical Machinery Co. —
Morden Machines Co. —
Morey Paper Mill Supply Co. —
Morningstar, Nicol, Inc. —
Mount Hope Machinery Co. —
Murray, D. J., Mfg. Co. —

N

Nash Engineering Co. —
National Adhesives —
National Aluminate Corp. —
National Aniline Div., Allied Chem. & Dye Corp. —
National Starch Products, Inc. —
National Tube Co. —
Naugatuck Chem. Div., U. S. Rubber Co. —
Newport News Shipbuilding Co. —
Niagara Alkali Co. —
Nichols Engrg. & Research Co. —
Noble & Wood Machine Co. 40
Nopco Chemical Co. —
Norton Co. —

O

Oldbury Electro Chemical Co. —
Oliver United Filters, Inc. —

P

Paper & Industrial Appliances —
Parsons & Whittemore —
Perkins, B. F., & Sons Co. 27
Perkins Goodwin Co. —
Permutit Co., The —
Photovolt Corp. —
Pittsburgh Plate Glass Co. —
Plaskon Div., Libbey-Owens-Ford —
Poirier Control Co. —
Potdevin Machine Co. —
Powell, William, Co. —
Price & Pierce, Ltd. 53
Pulp & Paper Trading Co. —
Pusey & Jones Corp., The —

R

Railway Supply & Mfg. Co. —
Raymond, Chas. P., Service, Inc. 44
Reading Crane & Hoist Co. —
Record Fdy. & Machine Co. 52
Red Ray Manufacturing Co., Inc. 50
Reichhold Chemicals, Inc. —
Reidel, Gus, & Son —
Reliance Elec. & Engrg. Co. —
Research Corp. —
Restigouche Co., Ltd. —
Rice Barton Research Corp. —
Rogers, S. C., & Co. —
Rohm & Haas Co. —
Roosevelt Paper Co. —
Roots-Connersville Blower Corp. —
Ross, J. L., Co. 45
Ross, J. O., Engrg. Co. —
Ross Paper Machinery Co. —
Rust Engineering Co. 38

S

Sandusky Fdy. & Mch. Co. —
Sandy Hill Iron & Brass Works —
Seaboard Air Line R.R. Co. —
Shartle Bros. Machine Co. 8
Shuler & Benninghofen —
Simonds Saw & Steel Co. —
Sinclair Refining Co. —
Sirrine, J. E., Co. —
SKF Industries —
Smidth, F. L., & Co. —
Smith & Winchester Mfg. Co. —
Socony Vacuum Oil Co., Inc. Back Cover
Sonoco Products Co. 47
Spray Engineering Co. 41
Sprout, Waldron —
Squier Corp., The —
Statement of Ownership —
Stebbins Engrg. & Mfg. —
Stein, Hall & Co., Inc. —
Stephens Adamson Mfg. Co. 39
Stickle Steam Specialties Co. —
Stowe Woodward, Inc. —
Stroh Process Steel Co. —
Sun Oil Co. 6
Sutherland Research Corp. —
Swenson Evaporator Co. —

T

Taylor Instrument Cos. —
Taylor Stiles & Co. —
Tennessee Coal, Iron & R. R. Co. —
Testing Machines, Inc. —
Texas Co., The —
Texas Gulf Sulphur Co. 31
Thiele Kaolin Co. —
Thwing-Albert Instrument Co. —
Thomas Paper Stock Co. 42
Tide Water Assoc. Oil Co. —
Timken Roller Bearing Co. —
Tissue Converting Corp. —
Titanium Pigment Corp. —
Towmotor Corp. —
Tracerlab, Inc. 57

U

Union Screen Plate Co. —
United Carbon Co., Inc. —
U. S. Rubber Co. —
U. S. Steel Co. —
United States Steel Export Co. —
United States Steel Supply Co. —

V

Valley Iron Works Co. —
Vanderbilt, R. T., Co. —
Vapor Systems Co. 6
Vaughan, Frank C. —
Virginia Smelting Co. —

W

Waldron, John, Corp. —
Wallace & Tiernan Co. —
Walworth Co. —
Waterbury Felt Co. —
Waterbury, H., & Sons Co., Inc. —
Warren Steam Pump Co. —
Weber, H. G., & Co., Inc. —
Wellman Engineering Co. 53
Western Gear Works —
Western Precipitation Corp. —
West Virginia Pulp & Paper Co. 51
Weyerhaeuser Timber Co. —
Wheeler Rolf Co. 51
Whiting Corp. —
Williams Apparatus Co. 55
William Gray Co. —
Worthington Pump & Mach. Corp. —
Wyandotte Chemicals Corp. —

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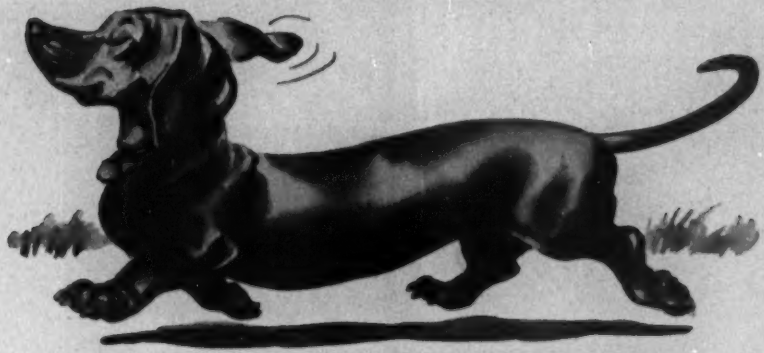

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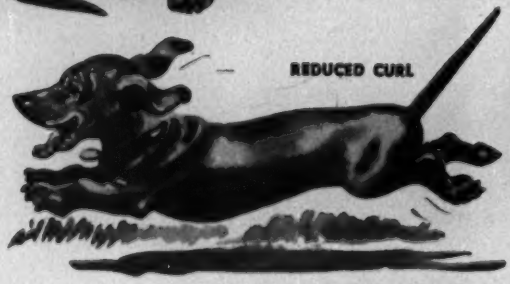

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